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(54) **COLLAPSIBLE SHELL COVER FOR
COMPUTING DEVICE**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

4,823,283 A 4/1989 Diehm et al.

5,045,997 A 9/1991 Watanabe

5,046,001 A 9/1991 Barker et al.

5,168,426 A 12/1992 Hoving et al.

5,189,732 A 2/1993 Kondo

5,258,748 A 11/1993 Jones

5,297,032 A 3/1994 Trojan et al.

(Continued)

FOREIGN PATENT DOCUMENTS

CN 1512301 7/2004

CN 1650250 8/2005

(Continued)

OTHER PUBLICATIONS

"International Search Report and Written Opinion", Application No.
PCT/CN2014/089867, Jun. 26, 2015, 15 pages.

(Continued)

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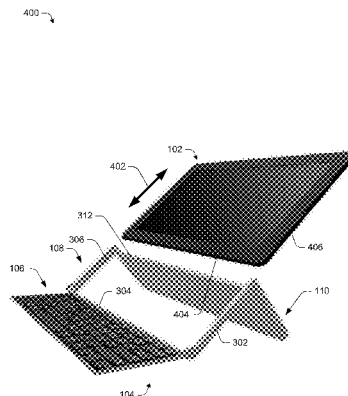
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ABSTRACT

A collapsible shell cover for a computing device having a holder portion, an input device portion, and kickstand portion is described that is configured to support a computing device at a viewing angle in an open configuration and to form a shell cover for the computing device in a collapsed configuration. The holder may receive the computing device between edge members having support lips for support. The input device and kickstand are rotatably secured to the holder at opposing ends of the edge members. In the open configuration, the holder is positioned at the viewing angle, the kickstand is rotated for support at a rear of the holder, and the input device is rotated to extend outward from a front of the holder. In the collapsed configuration, the holder, input device, and kickstand portion are aligned in a common plane to form the shell cover for the computing device.

20 Claims, 12 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,321,750 A	6/1994	Nadan	6,577,350 B1	6/2003	Proehl et al.
5,339,392 A	8/1994	Risberg et al.	6,591,244 B2	7/2003	Jim et al.
5,406,307 A	4/1995	Hirayama et al.	6,597,374 B1	7/2003	Baker et al.
5,432,932 A	7/1995	Chen et al.	6,628,309 B1	9/2003	Dodson et al.
5,463,725 A	10/1995	Henckel et al.	6,636,246 B1	10/2003	Gallo et al.
5,485,197 A	1/1996	Hoarty	6,662,023 B1	12/2003	Helle
5,487,143 A	1/1996	Southgate	6,675,387 B1	1/2004	Boucher et al.
5,495,566 A	2/1996	Kwatinetz	6,690,387 B2	2/2004	Zimmerman et al.
5,515,495 A	5/1996	Ikemoto	6,697,825 B1	2/2004	Underwood et al.
5,574,836 A	11/1996	Broemmelsiek	6,707,449 B2	3/2004	Hinckley et al.
5,598,523 A	1/1997	Fujita	6,710,771 B1	3/2004	Yamaguchi et al.
5,603,053 A	2/1997	Gough et al.	6,721,958 B1	4/2004	Dureau
5,611,060 A	3/1997	Belfiore et al.	6,724,403 B1	4/2004	Santoro et al.
5,623,613 A	4/1997	Rowe et al.	6,727,894 B1 *	4/2004	Karidis G06F 1/1616 178/18.01
5,640,176 A	6/1997	Mundt et al.	6,784,925 B1	8/2004	Tomat et al.
5,650,827 A	7/1997	Tsumori et al.	6,798,421 B2	9/2004	Baldwin
5,657,049 A	8/1997	Ludolph et al.	6,798,649 B1	9/2004	Olodort
5,659,693 A	8/1997	Hansen	6,801,203 B1	10/2004	Hussain
5,675,329 A	10/1997	Barker	6,807,558 B1	10/2004	Hassett et al.
5,687,331 A	11/1997	Volk et al.	6,832,355 B1	12/2004	Duperrouzel et al.
5,712,995 A	1/1998	Cohn	6,857,104 B1	2/2005	Cahn
5,771,042 A	6/1998	Santos-Gomez	6,865,297 B2	3/2005	Loui
5,793,415 A	8/1998	Gregory et al.	6,873,329 B2	3/2005	Cohen et al.
5,819,284 A	10/1998	Farber et al.	6,876,312 B2	4/2005	Yu
5,844,547 A	12/1998	Minakuchi et al.	6,885,974 B2	4/2005	Holle
5,859,636 A	1/1999	Pandit	6,904,597 B2	6/2005	Jin
5,860,073 A	1/1999	Ferrel et al.	6,920,445 B2	7/2005	Bae
5,889,517 A	3/1999	Ueda et al.	6,938,101 B2	8/2005	Hayes et al.
5,905,492 A	5/1999	Straub et al.	6,961,731 B2	11/2005	Holbrook
5,914,720 A	6/1999	Maples et al.	6,971,067 B1	11/2005	Karson et al.
5,940,076 A	8/1999	Sommers et al.	6,972,776 B2	12/2005	Davis et al.
5,943,041 A	8/1999	Allison et al.	6,975,306 B2	12/2005	Hinckley
5,959,621 A	9/1999	Nawaz et al.	6,975,507 B2 *	12/2005	Wang G06F 1/1616 16/333
5,963,204 A	10/1999	Ikeda et al.	6,976,210 B1	12/2005	Silva et al.
6,008,809 A	12/1999	Brooks	6,978,303 B1	12/2005	McCreesh et al.
6,008,816 A	12/1999	Eisler	6,983,310 B2	1/2006	Rouse
6,009,519 A	12/1999	Jones et al.	6,987,991 B2	1/2006	Nelson
6,011,542 A	1/2000	Durrani et al.	7,013,041 B2	3/2006	Miyamoto
6,028,600 A	2/2000	Rosin et al.	7,017,119 B1	3/2006	Johnston et al.
6,057,839 A	5/2000	Advani et al.	7,019,757 B2	3/2006	Brown et al.
6,064,383 A	5/2000	Skelly	7,025,274 B2	4/2006	Solomon et al.
6,104,418 A	8/2000	Tanaka et al.	7,028,264 B2	4/2006	Santoro et al.
6,108,003 A	8/2000	Hall, Jr. et al.	7,032,187 B2	4/2006	Keely, Jr. et al.
6,111,585 A	8/2000	Choi	7,036,090 B1	4/2006	Nguyen
6,115,040 A	9/2000	Bladow et al.	7,036,091 B1	4/2006	Nguyen
6,166,736 A	12/2000	Hugh	7,042,460 B2	5/2006	Hussain et al.
6,188,405 B1	2/2001	Czerwinski et al.	7,051,291 B2	5/2006	Sciammarella et al.
6,211,921 B1	4/2001	Cherian et al.	7,054,441 B2 *	5/2006	Pletikosa G06F 1/1626 361/679.24
6,212,564 B1	4/2001	Harter et al.	7,058,955 B2	6/2006	Porkka
6,216,141 B1	4/2001	Straub et al.	7,065,385 B2	6/2006	Jarrad et al.
6,266,098 B1	7/2001	Cove et al.	7,065,386 B1	6/2006	Smethers
6,278,448 B1	8/2001	Brown et al.	7,075,535 B2	7/2006	Aguera y Arcas
6,281,940 B1	8/2001	Sciammarella	7,089,507 B2	8/2006	Lection et al.
6,311,058 B1	10/2001	Wecker et al.	7,091,998 B2	8/2006	Miller-Smith
6,346,935 B1	2/2002	Nakajima et al.	7,093,201 B2	8/2006	Duarte
6,369,837 B1	4/2002	Schirmer	7,106,349 B2	9/2006	Baar et al.
6,385,630 B1	5/2002	Ejerhed	7,111,044 B2	9/2006	Lee
6,396,963 B2	5/2002	Shaffer	7,133,707 B1	11/2006	Rak
6,411,307 B1	6/2002	Rosin et al.	7,133,859 B1	11/2006	Wong
6,424,338 B1	7/2002	Anderson	7,139,800 B2	11/2006	Bellotti et al.
6,426,753 B1	7/2002	Migdal	7,146,573 B2	12/2006	Brown et al.
6,433,789 B1	8/2002	Rosman	7,155,729 B1	12/2006	Andrew et al.
6,448,987 B1	9/2002	Easty et al.	7,158,123 B2	1/2007	Myers et al.
6,449,638 B1	9/2002	Wecker et al.	7,158,135 B2	1/2007	Santodomingo et al.
6,456,334 B1	9/2002	Duhault	7,178,111 B2	2/2007	Glein et al.
6,489,977 B2	12/2002	Sone	7,194,506 B1	3/2007	White et al.
6,505,243 B1	1/2003	Lortz	7,197,702 B2	3/2007	Niyogi et al.
6,507,643 B1	1/2003	Groner	7,210,099 B2	4/2007	Rohrbaugh et al.
6,510,144 B1	1/2003	Dommety et al.	7,216,588 B2	5/2007	Suess
6,510,466 B1	1/2003	Cox et al.	7,249,326 B2	7/2007	Stoakley et al.
6,510,553 B1	1/2003	Hazra	7,251,782 B1	7/2007	Albers
6,538,635 B1	3/2003	Ringot	7,262,775 B2	8/2007	Calkins et al.
6,570,582 B1	5/2003	Sciammarella et al.	7,263,668 B1	8/2007	Lentz
6,570,597 B1	5/2003	Seki et al.	7,277,924 B1	10/2007	Wichmann et al.
6,577,323 B1	6/2003	Jamieson et al.	7,280,097 B2	10/2007	Chen et al.
			7,283,620 B2	10/2007	Adamczyk

(56)

References Cited

U.S. PATENT DOCUMENTS

7,289,806 B2	10/2007	Morris et al.	8,131,808 B2	3/2012	Aoki et al.
7,296,184 B2	11/2007	Derks et al.	8,134,727 B1	3/2012	Shmunis et al.
7,296,242 B2	11/2007	Agata et al.	8,138,869 B1	3/2012	Lauder et al.
7,304,638 B2	12/2007	Murphy	8,150,924 B2	4/2012	Buchheit et al.
7,310,100 B2	12/2007	Hussain	8,175,653 B2	5/2012	Smuga
7,333,092 B2	2/2008	Zadesky et al.	8,176,438 B2	5/2012	Zaman et al.
7,333,120 B2	2/2008	Venolia	8,190,707 B2	5/2012	Trivedi et al.
7,336,263 B2	2/2008	Valikangas	8,209,623 B2	6/2012	Barletta et al.
7,343,567 B2	3/2008	Mann et al.	8,225,193 B1	7/2012	Kleinschnitz et al.
7,369,647 B2	5/2008	Gao et al.	8,238,876 B2	8/2012	Teng
7,376,907 B2	5/2008	Santoro et al.	8,245,152 B2	8/2012	Brunner et al.
7,386,807 B2	6/2008	Cummins et al.	8,245,156 B2	8/2012	Mouilleseaux et al.
7,388,578 B2	6/2008	Tao	8,250,494 B2	8/2012	Butcher
7,403,191 B2	7/2008	Sinclair	8,255,473 B2	8/2012	Eren et al.
7,408,538 B2	8/2008	Hinckley et al.	8,255,812 B1	8/2012	Parparita et al.
7,412,663 B2	8/2008	Lindsay et al.	8,255,818 B2	8/2012	Bales et al.
7,433,920 B2	10/2008	Blagsvedt et al.	8,259,437 B2	9/2012	Vesely
7,447,520 B2	11/2008	Scott	8,269,736 B2	9/2012	Wilairat
7,461,151 B2	12/2008	Colson et al.	8,272,104 B2	9/2012	Chen et al.
7,469,380 B2	12/2008	Wessling et al.	8,280,901 B2	10/2012	McDonald
7,469,381 B2	12/2008	Ording	8,289,688 B2	10/2012	Behar et al.
7,478,326 B2	1/2009	Holecsek et al.	8,300,392 B2	10/2012	Weng
7,479,949 B2	1/2009	Jobs	8,312,383 B2	11/2012	Gilfix
7,480,870 B2	1/2009	Anzures	8,334,871 B2	12/2012	Hamilton et al.
7,483,418 B2	1/2009	Maurer	8,355,698 B2	1/2013	Teng et al.
7,484,182 B1	1/2009	Smith	8,384,726 B1	2/2013	Grabowski et al.
7,487,467 B1	2/2009	Kawahara et al.	8,385,952 B2	2/2013	Friedman et al.
7,496,830 B2	2/2009	Rubin	8,411,046 B2	4/2013	Kruzeniski et al.
7,500,175 B2	3/2009	Colle et al.	8,429,565 B2	4/2013	Agarawala et al.
7,512,966 B2	3/2009	Lyons, Jr. et al.	8,448,083 B1	5/2013	Migos et al.
7,577,918 B2	8/2009	Lindsay	8,473,870 B2	6/2013	Hinckley et al.
7,581,034 B2	8/2009	Polivy et al.	8,525,808 B1	9/2013	Buening
7,593,995 B1	9/2009	He et al.	8,527,892 B2	9/2013	Sirpal et al.
7,595,810 B2	9/2009	Louch	8,539,384 B2	9/2013	Hinckley et al.
7,599,790 B2	10/2009	Rasmussen et al.	8,548,431 B2	10/2013	Teng et al.
7,600,189 B2	10/2009	Fujisawa	8,549,430 B2	10/2013	Russell et al.
7,600,234 B2	10/2009	Dobrowski et al.	8,560,959 B2	10/2013	Zaman et al.
7,606,714 B2	10/2009	Williams et al.	8,584,150 B2	11/2013	Wallace
7,607,096 B2	10/2009	Oreizy et al.	8,589,815 B2	11/2013	Fong et al.
7,607,106 B2	10/2009	Ernst et al.	8,612,874 B2	12/2013	Zaman et al.
7,610,563 B2	10/2009	Nelson et al.	8,615,707 B2	12/2013	Fortuna et al.
7,614,018 B1	11/2009	Ohazama et al.	8,615,713 B2	12/2013	Sun et al.
7,619,615 B1	11/2009	Donoghue	8,627,227 B2	1/2014	Matthews et al.
7,640,518 B2	12/2009	Forlines et al.	8,639,819 B2	1/2014	Pohja et al.
7,644,361 B2	1/2010	Wu et al.	8,687,023 B2	4/2014	Markiewicz et al.
7,653,883 B2	1/2010	Hotelling et al.	8,689,123 B2	4/2014	Zaman et al.
7,657,849 B2	2/2010	Chaudhri et al.	8,749,960 B2	6/2014	Mori
7,663,607 B2	2/2010	Hotelling et al.	8,766,921 B2	7/2014	Ballagas et al.
7,664,067 B2	2/2010	Pointer	8,811,008 B2 *	8/2014	Selkirk G06F 13/4081 312/245
7,669,140 B2	2/2010	Matthews et al.	8,839,953 B2	9/2014	Igarashi
7,671,756 B2	3/2010	Herz et al.	8,875,879 B2	11/2014	Diebel et al.
7,681,138 B2	3/2010	Grasser et al.	8,922,982 B1 *	12/2014	Chen F16M 11/10 361/679.08
7,702,683 B1	4/2010	Kirshenbaum	8,988,876 B2	3/2015	Corbin et al.
7,730,425 B2	6/2010	de los Reyes et al.	9,052,820 B2	6/2015	Jarrett et al.
7,746,388 B2	6/2010	Jeon	9,078,338 B2	7/2015	Ohtaka
7,755,674 B2	7/2010	Kaminaga	9,131,756 B2	9/2015	Hurst et al.
7,765,490 B2	7/2010	Lai et al.	9,189,019 B2	11/2015	Jenkins et al.
7,834,861 B2	11/2010	Lee	9,280,181 B2	3/2016	Tomita et al.
7,840,979 B2	11/2010	Poling et al.	2001/0022621 A1	9/2001	Squibbs
7,877,707 B2	1/2011	Westerman et al.	2002/0000963 A1	1/2002	Yoshida et al.
7,880,728 B2	2/2011	De Los Reyes et al.	2002/0018051 A1	2/2002	Singh
7,889,180 B2	2/2011	Byun et al.	2002/0035607 A1	3/2002	Checkoway
7,895,309 B2	2/2011	Belali et al.	2002/0054117 A1	5/2002	van Dantzych et al.
7,898,529 B2	3/2011	Fitzmaurice et al.	2002/0060701 A1	5/2002	Naughton et al.
7,924,271 B2	4/2011	Christie et al.	2002/0070961 A1	6/2002	Xu et al.
7,933,632 B2	4/2011	Flynt et al.	2002/0077156 A1	6/2002	Smethers
7,962,281 B2	6/2011	Rasmussen et al.	2002/0091755 A1	7/2002	Narin
7,983,718 B1	7/2011	Roka	2002/0097264 A1	7/2002	Dutta et al.
7,987,431 B2	7/2011	Santoro et al.	2002/0105531 A1	8/2002	Niemi
8,006,276 B2	8/2011	Nakagawa et al.	2002/0105553 A1	8/2002	Segre
8,050,030 B2	11/2011	Wu et al.	2002/0115476 A1	8/2002	Padawer et al.
8,065,628 B2	11/2011	Oshiro et al.	2002/0128036 A1	9/2002	Yach et al.
8,077,151 B2	12/2011	Morooka	2002/0129061 A1	9/2002	Swart et al.
8,086,275 B2	12/2011	Wykes	2002/0138248 A1	9/2002	Corston-Oliver et al.
8,108,781 B2	1/2012	Laansoo et al.	2002/0142762 A1	10/2002	Chmaytelli et al.
			2002/0145631 A1	10/2002	Arbab et al.
			2002/0152305 A1	10/2002	Jackson et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2002/0154176	A1	10/2002	Barksdale et al.	2005/0280719	A1	12/2005	Kim
2002/0161634	A1	10/2002	Kaars	2006/0004685	A1	1/2006	Pyhalammi et al.
2002/0186251	A1	12/2002	Himmel et al.	2006/0005207	A1	1/2006	Louch et al.
2002/0194385	A1	12/2002	Linder et al.	2006/0007645	A1	1/2006	Chen et al.
2003/0003899	A1	1/2003	Tashiro et al.	2006/0010394	A1	1/2006	Chaudhri et al.
2003/0008686	A1	1/2003	Park et al.	2006/0015562	A1	1/2006	Kilian-Kehr et al.
2003/0011643	A1	1/2003	Nishihihata	2006/0015736	A1	1/2006	Callas et al.
2003/0019996	A1	1/2003	Shields	2006/0015812	A1	1/2006	Cunningham
2003/0020671	A1	1/2003	Santoro et al.	2006/0015820	A1	1/2006	Wood
2003/0040300	A1	2/2003	Bodic	2006/0026013	A1	2/2006	Kraft
2003/0046396	A1	3/2003	Richter et al.	2006/0026521	A1	2/2006	Hotelling et al.
2003/0073414	A1	4/2003	Capps	2006/0036425	A1	2/2006	Le Cocq et al.
2003/0096604	A1	5/2003	Vollandt	2006/0048073	A1	3/2006	Jarrett et al.
2003/0105827	A1	6/2003	Tan et al.	2006/0048101	A1	3/2006	Krassovsky et al.
2003/0135582	A1	7/2003	Allen et al.	2006/0059430	A1	3/2006	Bells
2003/0187996	A1	10/2003	Cardina et al.	2006/0070005	A1	3/2006	Gilbert et al.
2003/0222907	A1	12/2003	Heikes et al.	2006/0074735	A1	4/2006	Shukla et al.
2003/0225846	A1	12/2003	Heikes et al.	2006/0074771	A1	4/2006	Kim et al.
2003/0234799	A1	12/2003	Lee	2006/0075360	A1	4/2006	Bixler
2004/0015553	A1	1/2004	Griffin et al.	2006/0103623	A1	5/2006	Davis
2004/0066414	A1	4/2004	Czerwinski et al.	2006/0107231	A1	5/2006	Matthews et al.
2004/0066418	A1	4/2004	Tosey	2006/0112354	A1	5/2006	Park et al.
2004/0068543	A1	4/2004	Seifert	2006/0114239	A1	6/2006	Nakajima
2004/0078299	A1	4/2004	Down-Logan	2006/0129543	A1	6/2006	Bates et al.
2004/0111673	A1	6/2004	Bowman et al.	2006/0135220	A1	6/2006	Kim et al.
2004/0114315	A1	6/2004	Anlauff	2006/0136773	A1	6/2006	Kespohl et al.
2004/0165010	A1	8/2004	Robertson et al.	2006/0152803	A1	7/2006	Provitola
2004/0185883	A1	9/2004	Rukman	2006/0156247	A1	7/2006	McCormack et al.
2004/0212586	A1	10/2004	Denny	2006/0172724	A1	8/2006	Linkert et al.
2004/0212617	A1	10/2004	Fitzmaurice et al.	2006/0173911	A1	8/2006	Levin et al.
2004/0212954	A1*	10/2004	Ulla	2006/0184901	A1	8/2006	Dietz
			G06F 1/1626	2006/0190833	A1	8/2006	SanGiovanni et al.
			361/679.09	2006/0192689	A1	8/2006	Wang et al.
2004/0217954	A1	11/2004	O'Gorman et al.	2006/0199598	A1	9/2006	Lee et al.
2004/0217980	A1	11/2004	Radburn et al.	2006/0212806	A1	9/2006	Griffin et al.
2004/0237048	A1	11/2004	Tojo et al.	2006/0218234	A1	9/2006	Deng et al.
2004/0246666	A1	12/2004	Maskatia et al.	2006/0218501	A1	9/2006	Wilson et al.
2004/0250217	A1	12/2004	Tojo et al.	2006/0224993	A1	10/2006	Wong et al.
2005/0002158	A1	1/2005	Olodort	2006/0246955	A1	11/2006	Nirhamo
2005/0005241	A1	1/2005	Hunleth et al.	2006/0248471	A1	11/2006	Lindsay et al.
2005/0028208	A1	2/2005	Ellis	2006/0253685	A1	11/2006	Wong et al.
2005/0044058	A1	2/2005	Matthews et al.	2006/0253801	A1	11/2006	Okaro et al.
2005/0050462	A1	3/2005	Whittle et al.	2006/0259870	A1	11/2006	Hewitt et al.
2005/0052831	A1*	3/2005	Chen	2006/0259873	A1	11/2006	Mister
			G06F 1/1616	2006/0262134	A1	11/2006	Hamiter et al.
			361/679.11	2006/0268100	A1	11/2006	Karukka et al.
2005/0054384	A1	3/2005	Pasquale et al.	2006/0271520	A1	11/2006	Ragan
2005/0060647	A1	3/2005	Doan et al.	2006/0281448	A1	12/2006	Plestid et al.
2005/0060658	A1	3/2005	Tsukiori	2006/0293088	A1	12/2006	Kokubo
2005/0060663	A1	3/2005	Arkeketa et al.	2006/0294063	A1	12/2006	Ali et al.
2005/0060665	A1	3/2005	Rekimoto	2006/0294396	A1	12/2006	Witman et al.
2005/0079896	A1	4/2005	Kokko et al.	2007/0005716	A1	1/2007	LeVasseur et al.
2005/0085215	A1	4/2005	Kokko et al.	2007/0006094	A1	1/2007	Canfield et al.
2005/0085272	A1	4/2005	Anderson et al.	2007/0011610	A1	1/2007	Sethi et al.
2005/0108655	A1	5/2005	Andrea et al.	2007/0015532	A1	1/2007	Deelman
2005/0114788	A1	5/2005	Fabritius	2007/0024646	A1	2/2007	Saarinan
2005/0120306	A1	6/2005	Klassen et al.	2007/0030634	A1	2/2007	Maskatia
2005/0125739	A1	6/2005	Thompson et al.	2007/0035513	A1	2/2007	Sherrard et al.
2005/0136953	A1	6/2005	Jo	2007/0038567	A1	2/2007	Allaire et al.
2005/0143138	A1	6/2005	Lee et al.	2007/0050724	A1	3/2007	Lee et al.
2005/0149879	A1	7/2005	Jobs et al.	2007/0054679	A1	3/2007	Cho et al.
2005/0168925	A1	8/2005	Fang et al.	2007/0061306	A1	3/2007	Pell et al.
2005/0182798	A1	8/2005	Todd et al.	2007/0061488	A1	3/2007	Alagappan et al.
2005/0183021	A1	8/2005	Allen et al.	2007/0061714	A1	3/2007	Stuple et al.
2005/0184999	A1	8/2005	Daioiku	2007/0063995	A1	3/2007	Bailey et al.
2005/0198159	A1	9/2005	Kirsch	2007/0067272	A1	3/2007	Flynt
2005/0198584	A1	9/2005	Matthews et al.	2007/0067737	A1	3/2007	Zielinski et al.
2005/0200762	A1	9/2005	Barletta et al.	2007/0067798	A1	3/2007	Wroblewski
2005/0207734	A1	9/2005	Howell et al.	2007/0073718	A1	3/2007	Ramer
2005/0216300	A1	9/2005	Appelman et al.	2007/0076013	A1	4/2007	Campbell
2005/0223057	A1	10/2005	Buchheit et al.	2007/0080954	A1	4/2007	Griffin
2005/0223069	A1	10/2005	Cooperman et al.	2007/0082707	A1	4/2007	Flynt et al.
2005/0232166	A1	10/2005	Nierhaus	2007/0082708	A1	4/2007	Griffin
2005/0250547	A1	11/2005	Salman et al.	2007/0083746	A1	4/2007	Fallon et al.
2005/0258021	A1	11/2005	Liu et al.	2007/0083821	A1	4/2007	Garbow et al.
2005/0268237	A1	12/2005	Crane et al.	2007/0094597	A1	4/2007	Rostom
2005/0273614	A1	12/2005	Ahuja et al.	2007/0106635	A1	5/2007	Frieden et al.
				2007/0120835	A1	5/2007	Sato
				2007/0127638	A1	6/2007	Doulton

(56)

References Cited

U.S. PATENT DOCUMENTS

2007/0136677 A1	6/2007	Agarwal	2008/0122796 A1	5/2008	Jobs
2007/0150826 A1	6/2007	Anzures et al.	2008/0132252 A1	6/2008	Altman et al.
2007/0150842 A1	6/2007	Chaudhri et al.	2008/0141153 A1	6/2008	Samson et al.
2007/0157089 A1	7/2007	Van Os et al.	2008/0153551 A1	6/2008	Baek et al.
2007/0157099 A1	7/2007	Haug	2008/0155425 A1	6/2008	Murthy et al.
2007/0157105 A1	7/2007	Owens et al.	2008/0162651 A1	7/2008	Madnani
2007/0171192 A1	7/2007	Seo et al.	2008/0163104 A1	7/2008	Haug
2007/0171238 A1	7/2007	Ubillos et al.	2008/0165132 A1	7/2008	Weiss et al.
2007/0180401 A1	8/2007	Singh et al.	2008/0165136 A1	7/2008	Christie et al.
2007/0182595 A1	8/2007	Ghasabian	2008/0165141 A1	7/2008	Christie
2007/0182999 A1	8/2007	Anthony et al.	2008/0165163 A1	7/2008	Bathiche
2007/0185847 A1	8/2007	Budzik et al.	2008/0167058 A1	7/2008	Lee et al.
2007/0192707 A1	8/2007	Maeda et al.	2008/0168349 A1	7/2008	Lamiriaux et al.
2007/0192730 A1	8/2007	Simila et al.	2008/0168379 A1	7/2008	Forstall et al.
2007/0192733 A1	8/2007	Horiuchi	2008/0168382 A1	7/2008	Louch et al.
2007/0192739 A1	8/2007	Hunleth et al.	2008/0168402 A1	7/2008	Blumenberg
2007/0197196 A1	8/2007	Shenfield et al.	2008/0168403 A1	7/2008	Westerman et al.
2007/0198420 A1	8/2007	Goldstein	2008/0172609 A1	7/2008	Rytivaara
2007/0208840 A1	9/2007	Mcconville et al.	2008/0174570 A1	7/2008	Jobs et al.
2007/0211034 A1	9/2007	Griffin et al.	2008/0180399 A1	7/2008	Cheng
2007/0214422 A1	9/2007	Agarwal et al.	2008/0182628 A1	7/2008	Lee et al.
2007/0214429 A1	9/2007	Lyudoviyk et al.	2008/0184112 A1	7/2008	Chiang et al.
2007/0214454 A1	9/2007	Edwards et al.	2008/0189653 A1	8/2008	Taylor et al.
2007/0216651 A1	9/2007	Patel	2008/0189658 A1	8/2008	Jeong et al.
2007/0216661 A1	9/2007	Chen et al.	2008/0192056 A1	8/2008	Robertson et al.
2007/0222769 A1	9/2007	Otsuka et al.	2008/0198141 A1	8/2008	Lee et al.
2007/0225022 A1	9/2007	Satake	2008/0200142 A1	8/2008	Abdel-Kader et al.
2007/0233654 A1	10/2007	Karlson	2008/0208973 A1	8/2008	Hayashi
2007/0236468 A1	10/2007	Tuli	2008/0222273 A1	9/2008	Lakshmanan
2007/0238487 A1	10/2007	Kuhl et al.	2008/0222545 A1	9/2008	Lemay et al.
2007/0238488 A1	10/2007	Scott	2008/0222547 A1	9/2008	Wong et al.
2007/0247435 A1	10/2007	Benko et al.	2008/0222560 A1	9/2008	Harrison
2007/0250583 A1	10/2007	Hardy	2008/0222569 A1	9/2008	Champion
2007/0250787 A1	10/2007	Kawahara et al.	2008/0242362 A1	10/2008	Duarte
2007/0253758 A1	11/2007	Suess	2008/0250354 A1	10/2008	Park
2007/0255831 A1	11/2007	Hayashi et al.	2008/0259042 A1	10/2008	Thorn
2007/0256029 A1	11/2007	Maxwell	2008/0261513 A1	10/2008	Shin et al.
2007/0257891 A1	11/2007	Esenther et al.	2008/0261660 A1	10/2008	Huh et al.
2007/0257933 A1	11/2007	Klassen	2008/0263457 A1	10/2008	Kim et al.
2007/0260674 A1	11/2007	Shenfield	2008/0270558 A1	10/2008	Ma
2007/0262964 A1	11/2007	Zotov et al.	2008/0297475 A1	12/2008	Woolf et al.
2007/0263843 A1	11/2007	Foxenland	2008/0299999 A1	12/2008	Lockhart et al.
2007/0273663 A1	11/2007	Park et al.	2008/0301046 A1	12/2008	Martinez
2007/0273668 A1	11/2007	Park et al.	2008/0301575 A1	12/2008	Fermon
2007/0280457 A1	12/2007	Aberethy	2008/0307351 A1	12/2008	Louch et al.
2007/0281747 A1	12/2007	Pletikosa	2008/0307364 A1	12/2008	Chaudhri et al.
2007/0291007 A1	12/2007	Forlines et al.	2008/0309626 A1	12/2008	Westerman et al.
2008/0005668 A1	1/2008	Mavinkurve	2008/0313538 A1	12/2008	Hudson
2008/0024436 A1	1/2008	Morooka	2008/0316177 A1	12/2008	Tseng
2008/0028294 A1	1/2008	Sell et al.	2008/0317240 A1	12/2008	Chang et al.
2008/0032681 A1	2/2008	West	2008/0320413 A1	12/2008	Oshiro
2008/0036743 A1	2/2008	Westerman et al.	2009/0007009 A1	1/2009	Luneau et al.
2008/0040692 A1	2/2008	Sunday et al.	2009/0007017 A1	1/2009	Anzures et al.
2008/0048986 A1	2/2008	Khoo	2009/0012952 A1	1/2009	Fredriksson
2008/0052370 A1	2/2008	Snyder	2009/0029736 A1	1/2009	Kim et al.
2008/0057910 A1	3/2008	Thoresson et al.	2009/0031247 A1	1/2009	Walter et al.
2008/0057926 A1	3/2008	Forstall et al.	2009/0037469 A1	2/2009	Kirsch
2008/0059896 A1	3/2008	Anderson et al.	2009/0037846 A1	2/2009	Spalink et al.
2008/0065607 A1	3/2008	Weber	2009/0051671 A1	2/2009	Konstas
2008/0066010 A1	3/2008	Brodersen et al.	2009/0058821 A1	3/2009	Chaudhri et al.
2008/0072173 A1	3/2008	Brunner et al.	2009/0061837 A1	3/2009	Chaudhri et al.
2008/0076472 A1	3/2008	Hyatt	2009/0061948 A1	3/2009	Lee et al.
2008/0082934 A1	4/2008	Kocienda et al.	2009/0064055 A1	3/2009	Chaudhri
2008/0084970 A1	4/2008	Harper	2009/0070673 A1	3/2009	Barkan et al.
2008/0085700 A1	4/2008	Arora	2009/0077649 A1	3/2009	Lockhart
2008/0092054 A1	4/2008	Bhumkar et al.	2009/0083656 A1	3/2009	Dukhon
2008/0092057 A1	4/2008	Monson et al.	2009/0085851 A1	4/2009	Lim
2008/0095100 A1	4/2008	Cleveland et al.	2009/0085878 A1	4/2009	Heubel
2008/0102863 A1	5/2008	Hardy	2009/0089215 A1	4/2009	Newton
2008/0104544 A1	5/2008	Collins et al.	2009/0089459 A1	4/2009	Jeyaseelan et al.
2008/0107057 A1	5/2008	Kannan et al.	2009/0094562 A1	4/2009	Jeong et al.
2008/0113656 A1	5/2008	Lee et al.	2009/0103515 A1	4/2009	Pointer
2008/0114535 A1	5/2008	Nesbitt	2009/0106694 A1	4/2009	Kraft et al.
2008/0120569 A1	5/2008	Mann et al.	2009/0106696 A1	4/2009	Duarte
2008/0120571 A1	5/2008	Chang et al.	2009/0109243 A1	4/2009	Kraft
			2009/0117942 A1	5/2009	Bonington et al.
			2009/0125844 A1	5/2009	Weir et al.
			2009/0140061 A1	6/2009	Schultz et al.
			2009/0140986 A1	6/2009	Karkkainen et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2009/0144642	A1	6/2009	Crystal	2010/0105424	A1	4/2010	Smuga
2009/0144653	A1	6/2009	Ubillos	2010/0105438	A1	4/2010	Wykes
2009/0146962	A1	6/2009	Ahonen et al.	2010/0105439	A1	4/2010	Friedman
2009/0150618	A1	6/2009	Allen, Jr. et al.	2010/0105440	A1	4/2010	Kruzeniski
2009/0153492	A1	6/2009	Popp	2010/0105441	A1	4/2010	Voss
2009/0158144	A1	6/2009	Griffin	2010/0106607	A1	4/2010	Riddiford et al.
2009/0159763	A1	6/2009	Kim	2010/0106915	A1	4/2010	Krishnaprasad et al.
2009/0160809	A1	6/2009	Yang	2010/0107067	A1	4/2010	Vaisanen
2009/0163182	A1	6/2009	Gatti et al.	2010/0107068	A1	4/2010	Butcher
2009/0164888	A1	6/2009	Phan	2010/0107100	A1	4/2010	Schneekloth
2009/0164928	A1	6/2009	Brown et al.	2010/0122110	A1	5/2010	Ordogh
2009/0164936	A1	6/2009	Kawaguchi	2010/0122924	A1	5/2010	Andrews
2009/0174679	A1	7/2009	Westerman	2010/0131901	A1	5/2010	Takahashi et al.
2009/0178007	A1	7/2009	Matas et al.	2010/0138767	A1	6/2010	Wang et al.
2009/0182788	A1	7/2009	Chung et al.	2010/0138834	A1	6/2010	Agarwal et al.
2009/0184939	A1	7/2009	Wohlstadter et al.	2010/0145675	A1	6/2010	Lloyd et al.
2009/0192942	A1	7/2009	Cottrille et al.	2010/0146437	A1	6/2010	Woodcock et al.
2009/0199122	A1	8/2009	Deutsch et al.	2010/0157157	A1	6/2010	Yi
2009/0199128	A1	8/2009	Matthews et al.	2010/0159966	A1	6/2010	Friedman
2009/0199130	A1	8/2009	Tsern et al.	2010/0159994	A1	6/2010	Stallings et al.
2009/0205041	A1	8/2009	Michalske	2010/0159995	A1	6/2010	Stallings et al.
2009/0215504	A1	8/2009	Lando	2010/0162180	A1	6/2010	Dunnam et al.
2009/0228825	A1	9/2009	Van Os et al.	2010/0167699	A1	7/2010	Sigmund et al.
2009/0228841	A1	9/2009	Hildreth	2010/0169766	A1	7/2010	Duarte et al.
2009/0235200	A1	9/2009	Deutsch et al.	2010/0169772	A1	7/2010	Stallings et al.
2009/0235203	A1	9/2009	Iizuka	2010/0175018	A1	7/2010	Petschnigg et al.
2009/0248421	A1	10/2009	Michaelis et al.	2010/0175029	A1	7/2010	Williams
2009/0249257	A1	10/2009	Bove et al.	2010/0180233	A1	7/2010	Kruzeniski
2009/0265662	A1	10/2009	Bamford	2010/0185932	A1	7/2010	Coffman et al.
2009/0271778	A1	10/2009	Mandyam et al.	2010/0192102	A1	7/2010	Chmielewski et al.
2009/0284482	A1	11/2009	Chin	2010/0216491	A1	8/2010	Winkler et al.
2009/0288044	A1	11/2009	Matthews et al.	2010/0248688	A1	9/2010	Teng
2009/0292989	A1	11/2009	Matthews et al.	2010/0248689	A1	9/2010	Teng
2009/0293007	A1	11/2009	Duarte et al.	2010/0248741	A1	9/2010	Setlur et al.
2009/0293014	A1	11/2009	Meuninck et al.	2010/0248787	A1	9/2010	Smuga
2009/0298547	A1	12/2009	Kim et al.	2010/0248788	A1	9/2010	Yook et al.
2009/0303231	A1	12/2009	Robinet et al.	2010/0251153	A1	9/2010	SanGiovanni et al.
2009/0305732	A1	12/2009	Marcellino et al.	2010/0265196	A1	10/2010	Lee et al.
2009/0307105	A1	12/2009	Lemay et al.	2010/0281402	A1	11/2010	Staikos et al.
2009/0307589	A1	12/2009	Inose et al.	2010/0281409	A1	11/2010	Rainisto et al.
2009/0307623	A1	12/2009	Agarawala et al.	2010/0283743	A1	11/2010	Coddington et al.
2009/0313584	A1	12/2009	Kerr et al.	2010/0289806	A1	11/2010	Lao et al.
2009/0315839	A1	12/2009	Wilson et al.	2010/0293056	A1	11/2010	Flynt et al.
2009/0315847	A1	12/2009	Fujii	2010/0293501	A1	11/2010	Russ et al.
2009/0318171	A1	12/2009	Backholm et al.	2010/0295795	A1	11/2010	Wilairat
2009/0322760	A1	12/2009	Kwiatkowski	2010/0298034	A1	11/2010	Shin et al.
2009/0327969	A1	12/2009	Estrada	2010/0302148	A1	12/2010	Fleizach et al.
2010/0008490	A1	1/2010	Gharachorloo et al.	2010/0302172	A1	12/2010	Wilairat
2010/0013782	A1	1/2010	Liu et al.	2010/0302176	A1	12/2010	Nikula et al.
2010/0020025	A1	1/2010	Lemort et al.	2010/0302278	A1	12/2010	Shaffer et al.
2010/0020091	A1	1/2010	Rasmussen et al.	2010/0302712	A1	12/2010	Wilairat
2010/0031186	A1	2/2010	Tseng	2010/0311470	A1	12/2010	Seo et al.
2010/0042911	A1	2/2010	Wormald et al.	2010/0313165	A1	12/2010	Louch et al.
2010/0050076	A1	2/2010	Roth	2010/0321403	A1	12/2010	Inadome
2010/0058248	A1	3/2010	Park	2010/0325411	A1	12/2010	Jung et al.
2010/0062811	A1	3/2010	Park et al.	2010/0328431	A1	12/2010	Kim et al.
2010/0066698	A1	3/2010	Seo	2010/0333008	A1	12/2010	Taylor
2010/0070931	A1	3/2010	Nichols	2011/0004839	A1	1/2011	Cha et al.
2010/0073380	A1	3/2010	Kaplan et al.	2011/0004845	A1	1/2011	Ciabarra
2010/0075628	A1	3/2010	Ye	2011/0018806	A1	1/2011	Yano
2010/0077058	A1	3/2010	Messer	2011/0029598	A1	2/2011	Arnold et al.
2010/0077310	A1	3/2010	Karachale et al.	2011/0029904	A1	2/2011	Smith et al.
2010/0077330	A1	3/2010	Kaplan et al.	2011/0029927	A1	2/2011	Lietzke et al.
2010/0079392	A1	4/2010	Chiang et al.	2011/0029934	A1	2/2011	Locker et al.
2010/0079413	A1	4/2010	Kawashima et al.	2011/0043527	A1	2/2011	Ording et al.
2010/0081475	A1	4/2010	Chiang et al.	2011/0050063	A1	3/2011	Wang et al.
2010/0086022	A1	4/2010	Hunleth et al.	2011/0055773	A1	3/2011	Agarawala et al.
2010/0087169	A1	4/2010	Lin	2011/0057953	A1	3/2011	Horodezky
2010/0087173	A1	4/2010	Lin	2011/0074699	A1	3/2011	Marr et al.
2010/0088635	A1	4/2010	Louch	2011/0074710	A1	3/2011	Weeldreyer et al.
2010/0100839	A1	4/2010	Tseng et al.	2011/0074719	A1	3/2011	Yeh et al.
2010/0102998	A1	4/2010	Fux	2011/0078624	A1	3/2011	Missig et al.
2010/0103118	A1	4/2010	Townsend et al.	2011/0087739	A1	4/2011	Lin
2010/0103124	A1	4/2010	Kruzeniski	2011/0087988	A1	4/2011	Ray et al.
2010/0105370	A1	4/2010	Kruzeniski	2011/0093778	A1	4/2011	Kim et al.
				2011/0093816	A1	4/2011	Chang et al.
				2011/0093821	A1	4/2011	Wigdor et al.
				2011/0107272	A1	5/2011	Aguilar
				2011/0109563	A1	5/2011	Liu

(56)

References Cited

U.S. PATENT DOCUMENTS

2011/0113337 A1	5/2011	Liu et al.	2012/0212495 A1	8/2012	Butcher et al.
2011/0113486 A1	5/2011	Hunt et al.	2012/0216139 A1	8/2012	Ording et al.
2011/0119586 A1	5/2011	Blinnikka et al.	2012/0233571 A1	9/2012	Wever et al.
2011/0126156 A1	5/2011	Krishnaraj et al.	2012/0235930 A1	9/2012	Lazaridis et al.
2011/0154235 A1	6/2011	Min et al.	2012/0244841 A1	9/2012	Teng
2011/0157027 A1	6/2011	Rissa	2012/0254780 A1	10/2012	Mouton et al.
2011/0161845 A1	6/2011	Stallings et al.	2012/0254808 A1	10/2012	Gildfind
2011/0163968 A1	7/2011	Hogan	2012/0265644 A1	10/2012	Roa et al.
2011/0167341 A1	7/2011	Cranfill et al.	2012/0272181 A1	10/2012	Rogers et al.
2011/0170252 A1	7/2011	Jones et al.	2012/0278727 A1	11/2012	Ananthakrishnan et al.
2011/0173556 A1	7/2011	Czerwinski et al.	2012/0290962 A1	11/2012	Zielinski et al.
2011/0173568 A1	7/2011	Royal, Jr. et al.	2012/0293953 A1*	11/2012	Wu F16M 11/10 361/679.56
2011/0173569 A1	7/2011	Howes et al.	2012/0299968 A1	11/2012	Wong et al.
2011/0175930 A1	7/2011	Hwang et al.	2012/0300383 A1	11/2012	Lauder et al.
2011/0179386 A1	7/2011	Shaffer et al.	2012/0304068 A1	11/2012	Zaman et al.
2011/0179387 A1	7/2011	Shaffer et al.	2012/0304092 A1	11/2012	Jarrett et al.
2011/0184960 A1	7/2011	Delpha et al.	2012/0304102 A1	11/2012	LeVee et al.
2011/0185318 A1	7/2011	Hinckley et al.	2012/0304106 A1	11/2012	LeVee et al.
2011/0191675 A1	8/2011	Kauranen	2012/0304107 A1	11/2012	Nan et al.
2011/0202866 A1	8/2011	Huang et al.	2012/0304108 A1	11/2012	Jarrett et al.
2011/0209039 A1	8/2011	Hinckley et al.	2012/0304113 A1	11/2012	Patten et al.
2011/0209089 A1	8/2011	Hinckley et al.	2012/0304114 A1	11/2012	Wong et al.
2011/0209099 A1	8/2011	Hinckley	2012/0304116 A1	11/2012	Donahue et al.
2011/0209100 A1	8/2011	Hinckley et al.	2012/0304117 A1	11/2012	Donahue et al.
2011/0209101 A1	8/2011	Hinckley et al.	2012/0304118 A1	11/2012	Donahue et al.
2011/0209102 A1	8/2011	Hinckley et al.	2012/0304131 A1	11/2012	Nan et al.
2011/0209103 A1	8/2011	Hinckley et al.	2012/0304132 A1	11/2012	Sareen et al.
2011/0209104 A1	8/2011	Hinckley et al.	2012/0304133 A1	11/2012	Nan et al.
2011/0216064 A1	9/2011	Dahl et al.	2012/0311485 A1	12/2012	Caliendo, Jr. et al.
2011/0225547 A1	9/2011	Fong et al.	2012/0314342 A1	12/2012	Sheu et al.
2011/0231796 A1	9/2011	Vigil	2012/0323992 A1	12/2012	Brobst et al.
2011/0252346 A1	10/2011	Chaudhri	2012/0327580 A1*	12/2012	Gengler G06F 1/1626 361/679.09
2011/0252380 A1	10/2011	Chaudhri	2013/0033525 A1	2/2013	Markiewicz
2011/0252381 A1	10/2011	Chaudhri	2013/0042203 A1	2/2013	Wong et al.
2011/0276864 A1	11/2011	Oules	2013/0042206 A1	2/2013	Zaman et al.
2011/0279461 A1	11/2011	Hamilton et al.	2013/0044136 A1	2/2013	Matthews
2011/0290687 A1	12/2011	Han	2013/0044141 A1	2/2013	Markiewicz
2011/0297564 A1*	12/2011	Kim A45C 11/00 206/320	2013/0047079 A1	2/2013	Kroeger et al.
2011/0297566 A1	12/2011	Gallagher et al.	2013/0047105 A1	2/2013	Jarrett
2011/0316884 A1	12/2011	Giambalvo et al.	2013/0047117 A1	2/2013	Deutsch
2011/0320978 A1	12/2011	Horodezky et al.	2013/0047126 A1	2/2013	Sareen
2012/0005584 A1	1/2012	Seago et al.	2013/0057587 A1	3/2013	Leonard et al.
2012/0009000 A1	1/2012	Starrett	2013/0057588 A1	3/2013	Leonard
2012/0009903 A1	1/2012	Schultz et al.	2013/0063442 A1	3/2013	Zaman
2012/0012483 A1	1/2012	Fan	2013/0063443 A1	3/2013	Garside
2012/0023101 A1	1/2012	Heimendinger et al.	2013/0063465 A1	3/2013	Zaman
2012/0028687 A1	2/2012	Wykes	2013/0063490 A1	3/2013	Zaman et al.
2012/0037285 A1	2/2012	Diebel et al.	2013/0067381 A1	3/2013	Yalovsky
2012/0037523 A1	2/2012	Diebel et al.	2013/0067390 A1	3/2013	Kwiatkowski et al.
2012/0050185 A1	3/2012	Davydov et al.	2013/0067391 A1	3/2013	Pittappilly
2012/0050332 A1	3/2012	Nikara et al.	2013/0067398 A1	3/2013	Pittappilly
2012/0057288 A1*	3/2012	Chou G06F 1/1628 361/679.09	2013/0067399 A1	3/2013	Elliott
2012/0072853 A1	3/2012	Krigstrom et al.	2013/0067412 A1	3/2013	Leonard et al.
2012/0072953 A1	3/2012	James et al.	2013/0067420 A1	3/2013	Pittappilly
2012/0084704 A1	4/2012	Lee et al.	2013/0083953 A1*	4/2013	Chang G06F 1/1628 381/333
2012/0102433 A1	4/2012	Falkenburg	2013/0088431 A1	4/2013	Ballagas et al.
2012/0125791 A1	5/2012	Parker et al.	2013/0093757 A1	4/2013	Cornell
2012/0151397 A1	6/2012	Oberstein et al.	2013/0102366 A1	4/2013	Teng
2012/0159395 A1	6/2012	Deutsch et al.	2013/0107438 A1	5/2013	Lee et al.
2012/0159402 A1	6/2012	Nurmi et al.	2013/0114198 A1*	5/2013	Gengler B65D 25/00 361/679.08
2012/0161791 A1	6/2012	Shaw	2013/0134061 A1	5/2013	Wu et al.
2012/0162266 A1	6/2012	Douglas et al.	2013/0145244 A1	6/2013	Rothschiller et al.
2012/0167008 A1	6/2012	Zaman	2013/0167058 A1	6/2013	LeVee
2012/0167011 A1	6/2012	Zaman	2013/0175200 A1	7/2013	Poon et al.
2012/0174005 A1	7/2012	Deutsch et al.	2013/0178155 A1*	7/2013	Shulenberger G06F 1/162 455/41.1
2012/0174029 A1	7/2012	Bastide et al.	2013/0179781 A1	7/2013	Nan et al.
2012/0174034 A1	7/2012	Chae et al.	2013/0220043 A1	8/2013	hsu et al.
2012/0176401 A1	7/2012	Hayward et al.	2013/0235521 A1*	9/2013	Burch G06F 1/1635 361/679.48
2012/0179992 A1	7/2012	Smuga	2013/0242490 A1	9/2013	Ku
2012/0180001 A1	7/2012	Griffin et al.	2013/0268422 A1	10/2013	Ram et al.
2012/0194448 A1	8/2012	Rothkopf	2013/0270980 A1*	10/2013	Hsu H05K 5/03 312/223.1
2012/0210265 A1	8/2012	Delia et al.	2013/0277271 A1	10/2013	Toulotte
2012/0211377 A1	8/2012	Sajid			

(56) References Cited

U.S. PATENT DOCUMENTS

2013/0297700	A1	11/2013	Hayton et al.	
2013/0329375	A1	12/2013	Chiang et al.	
2013/0334020	A1	12/2013	Lan	
2014/0029189	A1	1/2014	Chang et al.	
2014/0035820	A1	2/2014	Zheng	
2014/0055937	A1	2/2014	Wang	
2014/0082552	A1	3/2014	Zaman	
2014/0083883	A1	3/2014	Elias	
2014/0109008	A1	4/2014	Zaman	
2014/0211393	A1*	7/2014	Lee	G06F 1/1626 361/679.12
2014/0218855	A1	8/2014	Fujino	
2014/0254079	A1*	9/2014	Yang	G06F 1/1632 361/679.09
2014/0262854	A1	9/2014	Chen et al.	
2014/0298062	A1	10/2014	Lee	
2014/0311880	A1*	10/2014	Krumpelman	H01H 13/14 200/5 A
2014/0332418	A1	11/2014	Cheung et al.	
2015/0001105	A1*	1/2015	Nyholm	A45C 11/00 206/45.2
2015/0027603	A1	1/2015	Mogol	
2015/0113476	A1	4/2015	Deutsch et al.	
2015/0122850	A1	5/2015	Quehl	
2015/0280768	A1	10/2015	Huang	
2015/0286350	A1	10/2015	Gu	
2015/0286351	A1	10/2015	Gu	
2015/0286352	A1	10/2015	Gu	
2015/0286387	A1	10/2015	Gu	
2015/0293564	A1	10/2015	Gu	
2015/0293601	A1	10/2015	Gu	
2015/0296060	A1	10/2015	Gu	

FOREIGN PATENT DOCUMENTS

CN	1735856	2/2006
CN	1749936	3/2006
CN	1786906	6/2006
CN	1851641	10/2006
CN	1936797	3/2007
CN	101006425	7/2007
CN	101075174	11/2007
CN	101114303	1/2008
CN	101150798	3/2008
CN	101228570	7/2008
CN	101316401	12/2008
CN	101354649	1/2009
CN	201477524	5/2010
CN	101770332	7/2010
CN	101809531	8/2010
CN	201556164	8/2010
CN	101976099	2/2011
CN	201741069	2/2011
CN	102144213	8/2011
CN	102197702	9/2011
CN	202075698	12/2011
CN	202206156	4/2012
CN	102520803	6/2012
CN	102624970	8/2012
CN	202472496	10/2012
CN	202904485	4/2013
CN	103105995	5/2013
CN	203025612	6/2013
CN	103197837	7/2013
CN	203133676	8/2013
CN	103475784	12/2013
CN	103513715	1/2014
CN	103562858	2/2014
CN	103562917	2/2014
CN	103629493	3/2014
EP	0583060	2/1994
EP	0965932	12/1999
EP	1337093	8/2003
EP	1526463	4/2005
EP	1752868	2/2007

EP	2172836	4/2009
EP	2535809	12/2012
EP	2677515	12/2013
JP	2004227393	8/2004
JP	2004357257	12/2004
JP	2006139615	6/2006
KR	200303655	2/2003
KR	20060019198	3/2006
KR	1020070036114	4/2007
KR	20070093585	9/2007
KR	1020070098337	10/2007
KR	20070120368	12/2007
KR	1020080025951	3/2008
KR	1020080041809	5/2008
KR	1020080076390	8/2008
KR	100854333	9/2008
KR	20080084156	9/2008
KR	1020080084156	9/2008
KR	1020080113913	12/2008
KR	20090002951	1/2009
KR	1020090041635	4/2009
KR	20090053143	5/2009
KR	20100010072	2/2010
KR	20100048375	5/2010
KR	20100056369	5/2010
KR	1020100056369	5/2010
TW	201023026	6/2010
TW	201106128	2/2011
WO	WO-9926127	5/1999
WO	WO-0129976	4/2001
WO	WO-2005026931	3/2005
WO	WO-2005027506	3/2005
WO	WO-2006019639	2/2006
WO	WO-2007121557	11/2007
WO	WO-2007134623	11/2007
WO	WO-2008030608	3/2008
WO	WO-2008031871	3/2008
WO	WO-2008035831	3/2008
WO	WO-2008084211	7/2008
WO	WO-2008146784	12/2008
WO	WO-2009000043	12/2008
WO	WO-2009012398	1/2009
WO	WO-2009049331	4/2009
WO	WO-2009054809	4/2009
WO	WO-2010024969	3/2010
WO	WO-2010048229	4/2010
WO	WO-2010048448	4/2010
WO	WO-2010048519	4/2010
WO	WO-2010117643	10/2010
WO	WO-2010117661	10/2010
WO	WO-2010119356	10/2010
WO	WO-2010135155	11/2010
WO	WO-2011041885	4/2011
WO	WO-2013158110	10/2013

OTHER PUBLICATIONS

“International Search Report and Written Opinion”, Application No. PCT/CN2014/089868, Aug. 3, 2015, 11 pages.

“Non-Final Office Action”, U.S. Appl. No. 14/516,294, Oct. 29, 2015, 14 pages.

“Non-Final Office Action”, U.S. Appl. No. 14/517,379, Oct. 7, 2015, 16 pages.

“Authoritative Dictionary of IEEE Standards Terms, 7th ed.”, Definitions—processor, memory, and storage, 2000, 3 pages.

“Extended European Search Report”, EP Application No. 11871863.4, May 11, 2015, 8 pages.

“Extended European Search Report”, EP Application No. 11871917.8, May 11, 2015, 9 pages.

“Extended European Search Report”, EP Application No. 11872137.2, Apr. 9, 2015, 12 pages.

“Foreign Office Action”, CN Application No. 201210331158.8, May 11, 2015, 7 pages.

“Foreign Office Action”, CN Application No. 201210331670.2, Mar. 25, 2015, 14 pages.

“Foreign Office Action”, CO Application No. 13300256, Apr. 11, 2015, 8 Pages.

(56)

References Cited

OTHER PUBLICATIONS

- "Foreign Office Action", CO Application No. 13300265, Apr. 21, 2015, 11 Pages.
- "Foreign Office Action", PH Application No. PH/1/2013/502367, Apr. 24, 2015, 3 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/073,300, Apr. 30, 2015, 15 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/229,693, Apr. 23, 2015, 28 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/550,432, Apr. 27, 2015, 15 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/904,880, May 4, 2015, 22 pages.
- "Notice of Allowance", U.S. Appl. No. 13/118,333, May 4, 2015, 16 pages.
- "Notice of Allowance", U.S. Appl. No. 13/229,702, Apr. 29, 2015, 7 pages.
- "Notice of Allowance", U.S. Appl. No. 13/345,383, May 18, 2015, 5 pages.
- "Rename a file", Retrieved from <<http://windows.microsoft.com/en-us/windows7/rename-a-file>> on Apr. 27, 2015, Aug. 24, 2009, 1 page.
- Bederson, "Implementing a Zooming User Interface: Experience Building Pad++", Software Practice & Experience, Wiley & Sons, Aug. 1998, 34 pages.
- Bederson, "Jazz: An Extensible Zoomable User Interface Graphics Toolkit in Java", Proceedings of the 2000 ACM SIGCPR Conference, Apr. 2000, 11 pages.
- Jetter, "Materializing the Query with Facet-Streams—A Hybrid Surface for Collaborative Search on Tabletops", May 7, 2011, 10 pages.
- "International Search Report and Written Opinion", Application No. PCT/CN2014/074788, Dec. 30, 2014, 12 pages.
- "International Search Report and Written Opinion", Application No. PCT/CN2014/074988, Jan. 8, 2015, 13 pages.
- "International Search Report and Written Opinion", Application No. PCT/CN2014/074825, Jan. 5, 2015, 15 pages.
- "International Search Report and Written Opinion", Application No. PCT/CN2014/074783, Dec. 31, 2014, 15 pages.
- "International Search Report and Written Opinion", Application No. PCT/CN2014/075038, Dec. 30, 2014, 16 pages.
- "7 Genius Tablet Cover Features", retrieved from <http://www.ebay.com/gds/7-Genius-Tablet-Cover-Features-/10000000177629377/g.html> on Oct. 29, 2014, Apr. 28, 2014, 6 pages.
- "Adobe Acrobat 8 Standard User Guide", Adobe Systems Incorporated, 2007, pp. 34 & 36.
- "Advisory Action", U.S. Appl. No. 12/414,382, Jan. 20, 2012, 3 pages.
- "Advisory Action", U.S. Appl. No. 12/433,605, Apr. 5, 2012, 3 pages.
- "Airbender 2.0", Retrieved From: <<http://www.newtrent.com/airbender-2-0-nt30b.html>> Mar. 31, 2014, 2013, 2 Pages.
- "Alltel Adds Dedicated Search Key to Phones", Retrieved from: <<http://www.phonescoop.com/news/item.php?n=2159>> on Nov. 26, 2008., Apr. 12, 2007, 2 Pages.
- "Android 2.3 User's Guide", Aug-2.3-103, Android mobile technology platform 2.3, Dec. 13, 2010, 380 pages.
- "Apple iPhone—8GB At&T", Retrieved from: <http://nytimes.com.com/smartphones/apple-iphone-8gb-at/4515-6452_7-32309245.html> on Nov. 20, 2008, Jun. 29, 2007, 11 pages.
- "Application User Model IDs", Retrieved from: <[http://msdn.microsoft.com/en-us/library/dd378459\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/dd378459(VS.85).aspx)> on Sep. 28, 2010, 2010, 6 pages.
- "Ask Web Hosting", Retrieved from: <http://www.askwebhosting.com/story/18501/HTC_FUZE_From_ATandampT_Fuses_Fun_and_Function_With_the_One-Touch_Power_of_TouchFLO_3D.html> on May 5, 2009., Nov. 11, 2008, 3 pages.
- "Basics of Your Device: Get Familiar with the Home Screen", Nokia USA—How to—retrieved from <<http://www.nokia.ca/get-support-and-software/product-support/c6-01/how-to/#>> on May 11, 2011, 3 pages.
- "Blackberry office tools: Qwerty Convert", Retrieved from: <http://blackberrysoftwarelistnet/blackberry/download-software/blackberry-office/qwerty_convert.aspx> on Nov. 20, 2008, 1 page.
- "Bluetooth 360 Rotating Removable Keyboard Case Cover Stand for iPad 2 3 4", Retrieved From: <<http://www.ebay.com/itm/Bluetooth-360-Rotating-Removable-Keyboard-Case-Cover-Stand-for-iPad-2-3-44200999748037>> Mar. 31, 2014, Mar. 19, 2014, 3 Pages.
- "Calc4M", Retrieved from: <<http://www.hellebo.com/Calc4M.html>> on Dec. 11, 2008, Sep. 10, 2008, 4 Pages.
- "Class ScrollView", Retrieved from: <<http://www.blackberry.com/developers/docs/6.0.0api/net/rim/device/api/ui/ScrollView.html>> on Sep. 28, 2010, 13 pages.
- "Content-Centric E-Mail Message Analysis in Litigation Document Reviews", Retrieved from: <<http://www.busmanagement.com/article/Issue-14/Data-Management/Content-Centric-E-Mail-Mes-sage-Analysis-in-Litigation-Documents-Reviews/>> on May 6, 2009, 2009, 5 Pages.
- "Daphne v1.47", retrieved from <<http://www.drk.com.ar/daphne.php>> on Nov. 18, 2011, 3 pages.
- "Dial a number", Retrieved from: <<http://www.phonespell.org/ialhelp.html>> on Nov. 20, 2008, 1 page.
- "DuoSense™ Multi-Touch Gestures", Retrieved from: <http://www.n-trig.com/Data/Uploads/Misc/DuoSenseMTG_final.pdf>, Jul. 2008, 4 pages.
- "Elecont Quick Desktop 1.0.43", Retrieved from: <<http://handheld.softpedia.com/get/System-Utilities/Launcher-Applications/Elecont-Quick-Desktop-72131.shtml>> on May 5, 2009., Mar. 13, 2009, 2 pages.
- "Email Notification for Microsoft Outlook and Outlook Express", Retrieved from: <<http://www.contextmagic.com/express-notification/>> on Sep. 29, 2010, Jul. 21, 2004, 3 pages.
- "Enhanced IBM Power Systems Software and PowerVM Restructuring", IBM United States Announcement 208-082, dated Apr. 8, 2008, available at <http://www.ibm.com/common/ssi/rep_ca/2/897/ENUS208-082/ENUS208082.PDF>, Apr. 8, 2008, pp. 1-19.
- "Exclusive: Windows Mobile 7 to Focus on Touch and Motion Gestures", Retrieved from: <<http://anti-linux.blogspot.com/2008/08/exclusive-windows-mobile-7-to-focus-on.html>> on May 6, 2009, Aug. 1, 2008, 14 pages.
- "Extended European Search Report", EP Application No. 09818253.8, Apr. 10, 2012, 7 pages.
- "Extended European Search Report", EP Application No. 09822736.6, Dec. 18, 2012, 7 pages.
- "Extended European Search Report", EP Application No. 10762112.0, Aug. 2, 2013, 7 Pages.
- "eXtreme Energy Conservation: Advanced Power-Saving Software for Wireless Devices", White Paper, Freescale Semiconductor, Inc., Document No. XTMENRGYCNVWP, Rev #0, available at <http://www.freescale.com/files/32bit/doc/white_paper/XTMENRGYCNVWP.pdf>, Feb. 2006, 15 pages.
- "Final Office Action", U.S. Appl. No. 11/305,789, Apr. 1, 2009, 10 pages.
- "Final Office Action", U.S. Appl. No. 11/502,264, Feb. 4, 2010, 15 pages.
- "Final Office Action", U.S. Appl. No. 11/502,264, Mar. 29, 2013, 16 pages.
- "Final Office Action", U.S. Appl. No. 11/502,264, Apr. 3, 2009, 9 pages.
- "Final Office Action", U.S. Appl. No. 12/244,545, Dec. 7, 2011, 16 pages.
- "Final Office Action", U.S. Appl. No. 12/244,545, Sep. 7, 2012, 23 pages.
- "Final Office Action", U.S. Appl. No. 12/413,977, Nov. 17, 2011, 16 pages.
- "Final Office Action", U.S. Appl. No. 12/414,382, Dec. 23, 2011, 7 pages.
- "Final Office Action", U.S. Appl. No. 12/414,476, Apr. 8, 2013, 25 pages.
- "Final Office Action", U.S. Appl. No. 12/414,476, Dec. 1, 2011, 20 pages.
- "Final Office Action", U.S. Appl. No. 12/433,605, Jul. 17, 2013, 13 pages.

(56)

References Cited

OTHER PUBLICATIONS

“Final Office Action”, U.S. Appl. No. 12/433,605, Feb. 3, 2012, 11 pages.

“Final Office Action”, U.S. Appl. No. 12/433,667, Jan. 7, 2013, 17 pages.

“Final Office Action”, U.S. Appl. No. 12/433,667, Sep. 13, 2011, 17 pages.

“Final Office Action”, U.S. Appl. No. 12/469,458, Feb. 1, 2013, 19 pages.

“Final Office Action”, U.S. Appl. No. 12/469,458, Nov. 17, 2011, 15 pages.

“Final Office Action”, U.S. Appl. No. 12/469,480, Apr. 10, 2013, 21 pages.

“Final Office Action”, U.S. Appl. No. 12/469,480, Feb. 9, 2012, 17 pages.

“Final Office Action”, U.S. Appl. No. 12/480,969, Nov. 23, 2012, 18 pages.

“Final Office Action”, U.S. Appl. No. 12/480,969, Jul. 24, 2013, 19 pages.

“Final Office Action”, U.S. Appl. No. 12/484,799, Apr. 30, 2012, 13 pages.

“Final Office Action”, U.S. Appl. No. 12/560,081, Mar. 14, 2012, 16 pages.

“Final Office Action”, U.S. Appl. No. 12/577,400, Aug. 16, 2013, 25 pages.

“Final Office Action”, U.S. Appl. No. 12/577,400, Sep. 14, 2012, 26 pages.

“Final Office Action”, U.S. Appl. No. 12/721,422, Mar. 7, 2013, 10 pages.

“Final Office Action”, U.S. Appl. No. 12/972,967, Oct. 11, 2013, 21 pages.

“Final Office Action”, U.S. Appl. No. 12/983,106, Oct. 7, 2013, 19 pages.

“Final Office Action”, U.S. Appl. No. 13/073,300, Apr. 1, 2014, 14 pages.

“Final Office Action”, U.S. Appl. No. 13/118,181, Dec. 20, 2013, 18 pages.

“Final Office Action”, U.S. Appl. No. 13/118,204, Nov. 21, 2013, 24 pages.

“Final Office Action”, U.S. Appl. No. 13/118,221, Mar. 17, 2014, 21 pages.

“Final Office Action”, U.S. Appl. No. 13/118,321, Dec. 19, 2013, 30 pages.

“Final Office Action”, U.S. Appl. No. 13/118,333, Apr. 23, 2014, 22 pages.

“Final Office Action”, U.S. Appl. No. 13/118,339, Aug. 22, 2013, 21 pages.

“Final Office Action”, U.S. Appl. No. 13/118,347, Aug. 15, 2013, 25 pages.

“Final Office Action”, U.S. Appl. No. 13/224,258, Sep. 11, 2013, 37 pages.

“Final Office Action”, U.S. Appl. No. 13/229,693, Sep. 4, 2013, 23 pages.

“Final Office Action”, U.S. Appl. No. 13/335,001, Nov. 22, 2013, 18 pages.

“Final Office Action”, U.S. Appl. No. 13/345,383, Jul. 30, 2013, 27 pages.

“Final Office Action”, U.S. Appl. No. 13/655,386, Jun. 6, 2013, 34 pages.

“Final Office Action”, U.S. Appl. No. 13/656,354, Jun. 17, 2013, 14 pages.

“Final Office Action”, U.S. Appl. No. 13/656,574, Aug. 23, 2013, 20 pages.

“Final Office Action”, U.S. Appl. No. 13/657,621, Sep. 10, 2013, 18 pages.

“Final Office Action”, U.S. Appl. No. 13/657,646, May 6, 2013, 12 pages.

“Final Office Action”, U.S. Appl. No. 13/657,789, Jun. 21, 2013, 35 pages.

“Final Office Action”, U.S. Appl. No. 13/658,694, Oct. 30, 2013, 17 pages.

“Flexible Water Resistant Full Size Keyboard USB”, Retrieved from <<http://www.fentek-ind.com/kbflusbs2b.htm#VFCJpbUcwnt>>, Jan. 26, 2013, 6 pages.

“Foreign Office Action”, CN Application No. 200980142644.1, Aug. 20, 2013, 9 Pages.

“Foreign Office Action”, CN Application No. 200980142661.5, Sep. 24, 2013, 8 Pages.

“Foreign Office Action”, JP Application No. 2011-533353, Jul. 5, 2013, 9 Pages.

“Foreign Office Action”, CL Application No. 2379-2011, Jul. 3, 2013, 8 pages.

“Foreign Office Action”, CN Application No. 200980139831.4, Jul. 1, 2013, 12 pages.

“Foreign Office Action”, CN Application No. 200980142632.9, Jun. 14, 2013, 6 pages.

“Foreign Office Action”, CN Application No. 200980142632.9, Jan. 29, 2013, 11 pages.

“Foreign Office Action”, CN Application No. 200980142644.1, Apr. 03, 2013, 10 pages.

“Foreign Office Action”, CN Application No. 200980142661.5, Jan. 21, 2013, 12 pages.

“Foreign Office Action”, CN Application No. 201080015728.1, May 16, 2013, 10 pages.

“Foreign Office Action”, CN Application No. 201080015728.1, Dec. 26, 2012, 9 pages.

“Foreign Office Action”, CN Application No. 201080015788.3, Jun. 5, 2013, 12 Pages.

“Foreign Office Action”, CN Application No. 201080015788.3, Dec. 24, 2012, 10 pages.

“Foreign Office Action”, CN Application No. 201080023212.1, Dec. 5, 2012, 10 pages.

“Foreign Office Action”, CN Application No. 201080023212.1, Jun. 5, 2013, 8 pages.

“Foreign Office Action”, CN Application No. 201080045865.X, Dec. 4, 2012, 10 pages.

“Foreign Office Action”, CN Application No. 201080045865.X, Jun. 4, 2013, 10 pages.

“Foreign Office Action”, CN Application No. 201110429183.5, Jan. 6, 2014, 10 Pages.

“Foreign Office Action”, CN Application No. 201110437542.1, Jan. 6, 2014, 10 Pages.

“Foreign Office Action”, CN Application No. 201110437572.2, Dec. 3, 2013, 7 pages.

“Foreign Office Action”, CN Application No. 201110454251.3, Dec. 27, 2013, 12 Pages.

“Foreign Office Action”, EP Application No. 10823883.3, Aug. 10, 2012, 5 pages.

“Foreign Office Action”, JP Application No. 2012-503523, Apr. 22, 2013, 5 Pages.

“Freeware.mobi”, Retrieved from: <<http://www.palmtreefreeware.mobi/download-palette.html>> on Nov. 6, 2008, Oct. 9, 2001, 2 pages.

“Getting started with Logitech® Fold-Up Keyboard”, Retrieved from <<http://www.logitech.com/assets/42319/fold-up-keyboard-for-ipad-2-quick-start-guide.pdf>>, May 27, 2012, 12 pages.

“GnomeCanvas”, Retrieved from: <<http://library.gnome.org/devel/libgnomecanvas/unstable/GnomeCanvas.html>> on Sep. 28, 2010, 11 pages.

“Google Apps versus Office 365: Audit Logs”, Retrieved From: <<http://www.linkgard.com/blog/google-apps/google-apps-vs-office-365-audit-logs.html>> Mar. 29, 2014, Jul. 23, 2013, 8 pages.

“Heatmap”, Retrieved From: <<https://support.google.com/drive/answer/91599?hl=en>> Mar. 29, 2014, 2 Pages.

“How Do I Cancel a “Drag” Motion on an Android Seekbar?”, retrieved from <<http://stackoverflow.com/questions/2917969/how-do-i-cancel-a-drag-motion-on-an-android-seekbar>> on Jun. 20, 2011, May 28, 2010, 1 page.

“How do I use Categories with my Weblog?”, Retrieved from: <http://support.mtcs.sixapart.com/tp-us-tp1/how_do_i_use_categories_with_my_weblog.html> on Sep. 28, 2010, Sep. 16, 2009, 3 pages.

(56)

References Cited**OTHER PUBLICATIONS**

"How do you dial 1-800-FLOWERS", Retrieved from: <<http://blogs.msdn.com/windowsmobile/archive/2007/02/06/how-do-you-dial-1-800-flowers.aspx>> on Nov. 20, 2008, Feb. 6, 2007, 24 pages.

"How-to Close an Application in BlackBerry PlayBook?", retrieved from <<http://stackoverflow.com/questions/5277027/how-to-close-an-application-in-blackberry-playbook>> on Nov. 18, 2011, 2 pages.

"HTC Shows HTC Snap with Snappy Email Feature", Retrieved from: <<http://www.wirelessandmobilenews.com/smartphones/> on May 5, 2009>, May 4, 2009, 10 Pages.

"IntelliScreen-New iPhone App Shows Today Screen Type Info in Lock Screen", Retrieved from: <<http://justanotheriphoneblog.com/wordpress/2008/05/13/intelliscreen-new-iphone-app-shows-today-screen-type-info-on-lock-screen/>> on Nov. 12, 2008, May 13, 2008, 11 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/028555, Oct. 12, 2010, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/028699, Oct. 4, 2010, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2013/059563, Nov. 7, 2013, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/067075, Dec. 12, 2012, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2009/061864, May 14, 2010, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2009/061382, May 26, 2010, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055725, Sep. 27, 2012, 10 pages.

"International Search Report and Written Opinion", Application No. PCT/US2009/061735, Jun. 7, 2010, 11 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/034772, Dec. 29, 2010, 12 pages.

"International Search Report and Written Opinion", Application No. PCT/CN2014/074793, Sep. 30, 2014, 15 pages.

"International Search Report and Written Opinion", Application No. PCT/US2012/047091, Dec. 27, 2012, 15 pages.

"International Search Report and Written Opinion", Application No. PCT/CN2014/075046, Oct. 28, 2014, 16 pages.

"International Search Report and Written Opinion", Application No. PCT/US2013/061066, Feb. 4, 2014, 17 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/038730, Jan. 19, 2011, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055513, Mar. 27, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/052119, May 2, 2011, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055514, May 22, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055512, May 24, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055520, May 9, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055524, Jun. 1, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/065702, Aug. 29, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055736, Sep. 17, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/067073, Sep. 17, 2012, 8 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055511, Apr. 24, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055523, May 10, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055521, May 15, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055522, May 15, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055496, Sep. 12, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055712, Sep. 21, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055493, 9/26/212, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055478, Sep. 27, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2011/055746, Sep. 27, 2012, 9 pages.

"International Search Report and Written Opinion", Application No. PCT/US2010/028553, Application Filing Date: Mar. 24, 2010, Nov. 9, 2010, 9 pages.

"Internet Explorer Window Restrictions", Retrieved from: [http://technet.microsoft.com/en-us/library/cc759517\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc759517(WS.10).aspx) on Jun. 28, 2011, Microsoft TechNet, 5 pages.

"Introducing Application Styling for Windows Forms", Infragistics Software Manual, Version 7.3.20073.1043, Nov. 2007, 95 pages.

"Introduction to Windows Touch", Retrieved from: <http://download.microsoft.com/download/a/d/f/adf1347d-08dc-41a4-9084-623b1194d4b2/Win7_touch.docx>, Dec. 18, 2008, pp. 1-7.

"iPad User Guide", retrieved from <http://cyndidannerkuhn.info/CDK/iPads_Resources_files/iPad_User_Guide.pdf> on Jun. 17, 2011, 154 pages.

"iPod touch User Guide for iPhone OS 3.0 Software", Apple Inc., 2009, 153 pages.

"iwerkz Universal Foldable Bluetooth Keyboard", Retrieved from <http://mywerkz.com/wordpress/wp-content/uploads/2013/10/44652_Manual_FoldGuide_9_23A.pdf>, 2014, 2 pages.

"Keyboard (5)", Retrieved from: <<http://landru.uwaterloo.ca/cgi-bin/man.cgi?section=5&topic=keyboard>> on Dec. 11, 2008., Aug. 11, 1997, 8 Pages.

"Keyboard Case Adjustable 10inch Rotating Stand Bluetooth USB Apple !pad 2 3", Retrieved From:<<http://shopping.rediff.com/product/keyboard-case-adjustable-10inch-rotating-stand-bluetooth-usb-apple-ipad-2-3/11935954>> Mar. 31, 2014, 2 Pages.

"Keyboard Shortcuts", Retrieved from: <<http://www.pctoday.com/editorial/article.asp?article=articles%2F2005%2Ft0311%2F26t11%2F26t11.asp>> on Aug. 3, 2009., Nov. 2005, 5 pages.

"KeyFolio Pro™ for iPad Air", Retrieved From:<<http://www.kensington.com/kensington/us/us/s/3478/keyfolio-pro%E2%84%A2-for-ipad-air.aspx#.UxYF5P1dV8F>> Feb. 26, 2014, Dec. 15, 2013, 2 Pages.

"KeyFolio Thin X2™ for iPad® Air", retrieved from <http://www.kensington.com/ce/ca/v/4462/1758/keyfolio-thin-x2-for-ipad-air#.VFBUffnLcpo> on Oct. 29, 2014, 3 pages.

"Kiosk Browser Chrome Customization Firefox 2.x", Retrieved from: <<http://stlouis-shopper.com/cgi-bin/mozdev-wiki.pl?ChromeCustomization>> on Oct. 22, 2008 Making a new chrome for the kiosk browser, Kiosk Project Kiosk Browser Chrome Customization Firefox-2.x, Aug. 16, 2007, 2 pages.

"Live Photo Gallery—Getting Started—from Camera to Panorama", Retrieved from: <<http://webdotwiz.spaces.live.com/blog/cns!2782760752B93233!1729.entry>> on May 5, 2009., Sep. 2008, 7 Pages.

"Logitech Ultrathin Keyboard Folio for iPad Air", Retrieved From: <<http://store.apple.com/us/product/HE900VC/A/logitech-ultrathin-keyboard-folio-for-ipad-air>> Mar. 28, 2014, 2013, 4 Pages.

"Magic mouse", Retrieved from: <<http://www.apple.com/magicmouse/>> on May 10, 2011, 3 pages.

"Meet ClamCase Pro", Retrieved From: <<http://clamcase.com/bluetooth-ipad-keyboard-case.html?PID=6146810>> Mar. 28, 2014, 6 Pages.

"MIDTB Tip Sheet: Book Courier", Retrieved from: <<http://www.midtb.org/tipsbookcourier.htm>> on Dec. 11, 2008., Sep. 26, 2005, 6 Pages.

"Mobile/UI/Designs/TouchScreen/workingUI", Retrieved from: <<https://wiki.mozilla.org/Mobile/UI/Designs/TouchScreen/workingUI>> on Oct. 26, 2009, 2009, 30 pages.

"moGo beta v.0.4", Retrieved from: <<http://forum.xda-developers.com/showthread.php?t=375196>> on Sep. 27, 2010, Mar. 7, 2008, 10 pages.

(56)

References Cited

OTHER PUBLICATIONS

"Moko Slim Case with Wakeup Feature for the Google Nexus 7 tablet", article and video retrieved from <http://www.youtube.com/watch?v=nZSgbmGuPjs> on Oct. 29, 2014, Aug. 8, 2012, 2 pages.

"Multi-touch", Retrieved from http://en.wikipedia.org/wiki/Multi-touch#Microsoft_Surface on Apr. 24, 2009, Apr. 17, 2009, 8 pages.

"My Favorite Gadgets, System Monitor II", Retrieved from <http://www.myfavorit gadgets.info/monitors/SystemMonitorIIsystem-monitorII.html> on Mar. 12, 2013, Jun. 8, 2010, 5 pages.

"New Features in WhatsApp Gold v12.0", retrieved from <http://www.netbright.co.th/?name=product&file=readproduct&id=12> On Jun. 10, 2011, 4 pages.

"Nokia E61 Tips and Tricks for Keyboard Shortcuts", Retrieved from: <http://www.mobiletopsoft.com/board/1810/nokia-e61-tips-and-tricks-for-keyboard-shortcuts.html> on Dec. 17, 2008., Jan. 27, 2006, 2 Pages.

"Non-Final Office Action", U.S. Appl. No. 13/228,707, Oct. 25, 2013, 12 pages.

"Non-Final Office Action", U.S. Appl. No. 13/228,888, Feb. 10, 2014, 21 pages.

"Non-Final Office Action", U.S. Appl. No. 11/215,052, Jun. 23, 2011, 17 pages.

"Non-Final Office Action", U.S. Appl. No. 11/305,789, Sep. 21, 2009, 5 pages.

"Non-Final Office Action", U.S. Appl. No. 11/502,264, Sep. 30, 2009, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 11/502,264, Sep. 14, 2012, 14 pages.

"Non-Final Office Action", U.S. Appl. No. 12/244,545, Mar. 27, 2012, 18 pages.

"Non-Final Office Action", U.S. Appl. No. 12/244,545, Aug. 17, 2011, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 12/413,977, Jul. 19, 2011, 17 pages.

"Non-Final Office Action", U.S. Appl. No. 12/413,977, Jul. 20, 2012, 18 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,382, Jul. 26, 2011, 9 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,434, Jan. 17, 2012, 7 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,434, May 31, 2012, 7 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,434, Aug. 2, 2011, 6 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,455, Aug. 29, 2011, 8 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,458, Jul. 6, 2011, 8 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,476, Nov. 9, 2012, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 12/414,476, Aug. 3, 2011, 21 pages.

"Non-Final Office Action", U.S. Appl. No. 12/433,605, Jan. 11, 2013, 7 pages.

"Non-Final Office Action", U.S. Appl. No. 12/433,605, Jun. 24, 2011, 10 pages.

"Non-Final Office Action", U.S. Appl. No. 12/433,667, Jun. 7, 2011, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 12/433,667, Feb. 3, 2012, 16 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,419, Nov. 9, 2011, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,419, May 23, 2012, 13 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,458, May 3, 2013, 21 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,458, Jul. 1, 2011, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,458, Sep. 21, 2012, 14 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,480, Aug. 27, 2013, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,480, Oct. 17, 2012, 16 pages.

"Non-Final Office Action", U.S. Appl. No. 12/469,480, Sep. 22, 2011, 14 pages.

"Non-Final Office Action", U.S. Appl. No. 12/470,558, Nov. 22, 2011, 9 pages.

"Non-Final Office Action", U.S. Appl. No. 12/480,969, Apr. 4, 2013, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 12/480,969, Aug. 7, 2012, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 12/484,799, Aug. 11, 2011, 12 pages.

"Non-Final Office Action", U.S. Appl. No. 12/484,799, Aug. 7, 2012, 13 pages.

"Non-Final Office Action", U.S. Appl. No. 12/484,845, Dec. 7, 2011, 16 pages.

"Non-Final Office Action", U.S. Appl. No. 12/560,081, Dec. 7, 2011, 16 pages.

"Non-Final Office Action", U.S. Appl. No. 12/577,400, Apr. 15, 2013, 25 pages.

"Non-Final Office Action", U.S. Appl. No. 12/577,400, Apr. 11, 2012, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 12/721,422, Oct. 1, 2012, 7 pages.

"Non-Final Office Action", U.S. Appl. No. 12/972,967, Jan. 30, 2013, 19 pages.

"Non-Final Office Action", U.S. Appl. No. 12/977,584, Dec. 7, 2012, 8 pages.

"Non-Final Office Action", U.S. Appl. No. 12/978,184, Jan. 23, 2013, 7 pages.

"Non-Final Office Action", U.S. Appl. No. 12/983,106, Nov. 9, 2012, 17 pages.

"Non-Final Office Action", U.S. Appl. No. 13/073,300, Jul. 25, 2013, 13 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,181, Mar. 4, 2013, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,204, Feb. 28, 2013, 13 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,221, Mar. 1, 2013, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,257, Mar. 5, 2013, 19 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,302, Mar. 4, 2014, 10 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,314, Feb. 27, 2014, 13 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,321, Jun. 10, 2013, 32 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,333, Jul. 5, 2013, 18 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,339, Feb. 11, 2013, 15 pages.

"Non-Final Office Action", U.S. Appl. No. 13/118,347, Feb. 12, 2013, 14 pages.

"Non-Final Office Action", U.S. Appl. No. 13/196,272, Feb. 6, 2013, 10 pages.

"Non-Final Office Action", U.S. Appl. No. 13/196,272, Sep. 3, 2013, 5 pages.

"Non-Final Office Action", U.S. Appl. No. 13/224,258, Jan. 8, 2013, 35 pages.

"Non-Final Office Action", U.S. Appl. No. 13/228,876, Nov. 22, 2013, 14 pages.

"Non-Final Office Action", U.S. Appl. No. 13/228,931, Apr. 7, 2014, 21 pages.

"Non-Final Office Action", U.S. Appl. No. 13/228,945, Apr. 14, 2014, 22 pages.

"Non-Final Office Action", U.S. Appl. No. 13/229,155, Nov. 18, 2013, 14 pages.

(56)

References Cited**OTHER PUBLICATIONS**

- "Non-Final Office Action", U.S. Appl. No. 13/229,556, Mar. 28, 2014, 12 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/229,693, Mar. 12, 2013, 21 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/229,709, Apr. 7, 2014, 12 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/335,001, Sep. 13, 2013, 15 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/335,001, Jan. 8, 2014, 17 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/345,383, Feb. 28, 2013, 25 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/492,495, Dec. 19, 2012, 6 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/492,495, Sep. 17, 2012, 8 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/655,386, Dec. 26, 2012, 23 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/655,390, Dec. 17, 2012, 12 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/656,354, Feb. 6, 2013, 10 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/656,574, Jan. 31, 2013, 21 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/656,639, Feb. 7, 2013, 29 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/657,621, Feb. 7, 2013, 19 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/657,646, Jan. 3, 2013, 13 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/657,789, Jan. 9, 2013, 38 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/658,694, Feb. 13, 2014, 19 pages.
- "Non-Final Office Action", U.S. Appl. No. 13/658,694, Apr. 26, 2013, 13 pages.
- "Normalizing Text: A Java Tutorial by Oracle", Retrieved from: <<http://docs.oracle.com/javase/tutorial/i18n/text/normalizerapi.html>> on Apr. 8, 2014, Nov. 11, 2006, 3 pages.
- "Notice of Allowance", U.S. Appl. No. 11/215,052, Mar. 14, 2012, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 11/305,789, Nov. 23, 2009, 8 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,382, Apr. 4, 2012, 4 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,434, Aug. 17, 2012, 4 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,455, Jan. 4, 2012, 4 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,458, Oct. 31, 2011, 2 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,458, Nov. 29, 2011, 2 pages.
- "Notice of Allowance", U.S. Appl. No. 12/414,458, Aug. 10, 2011, 6 pages.
- "Notice of Allowance", U.S. Appl. No. 12/433,667, Jun. 25, 2013, 14 pages.
- "Notice of Allowance", U.S. Appl. No. 12/469,419, Nov. 27, 2012, 13 pages.
- "Notice of Allowance", U.S. Appl. No. 12/470,558, Apr. 2, 2012, 7 pages.
- "Notice of Allowance", U.S. Appl. No. 12/470,558, Aug. 23, 2012, 2 pages.
- "Notice of Allowance", U.S. Appl. No. 12/484,799, Oct. 22, 2012, 10 pages.
- "Notice of Allowance", U.S. Appl. No. 12/484,845, Mar. 16, 2012, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 12/721,422, Jul. 11, 2013, 9 pages.
- "Notice of Allowance", U.S. Appl. No. 12/977,584, Jun. 19, 2013, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 12/978,184, Nov. 6, 2013, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 12/978,184, Aug. 2, 2013, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 13/196,272, Nov. 8, 2013, 8 pages.
- "Notice of Allowance", U.S. Appl. No. 13/492,495, Apr. 26, 2013, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 13/655,386, Apr. 25, 2014, 6 pages.
- "Notice of Allowance", U.S. Appl. No. 13/655,390, May 24, 2013, 5 pages.
- "Notice of Allowance", U.S. Appl. No. 13/656,639, Aug. 19, 2013, 14 pages.
- "Notifications", retrieved from <<http://msdn.microsoft.com/enus/library/aa511497.aspx>> on May 10, 2011, 16 pages.
- "OmneMon™ System Resource Metrics", retrieved from <http://www.omnesys.com/documents/OmneMonSRM_Brochure.pdf> on Jun. 10, 2011, 3 pages.
- "ONYX Graphics Announces New ONYX Prepedge Job Preparation Software", retrieved from <<http://www.largeformatreview.com/rip-software/433-onyx-graphics-announces-new-onyx->> on May 10, 2011, 2 pages.
- "Oracle Mobile Sales Assistant User Guide for BlackBerry", Retrieved from <http://download.oracle.com/docs/cd/E12547_01/books/PDF/MobileSalesAsstBB.pdf>, Nov. 2008, 20 pages.
- "Oracle8i Application Developer's Guide—Advanced Queuing Release 2 (8.1.6)", Retrieved from: <http://www.cs.otago.ac.nz/oradocs/appdev.817/a76938/adq01in5.htm> on May 6, 2009., Dec. 1999, 8 pages.
- "Oracle8i Application Developer's Guide—Advanced Queuing", Retrieved from: http://www.cs.umbc.edu/help/oracle8/server.815/a68005/03_adqli.htm on May 6, 2009., Feb. 1999, 29 Pages.
- "Oracle8i Concepts Release 8.1.5", Retrieved from: <http://www.cs.umbc.edu/help/oracle8/server.815/a67781/c16queue.htm> on May 6, 2009., Feb. 1999, 10 Pages.
- "Palette Extender 1.0.2", Retrieved from: <<http://palette-extender.en.softonic.com/symbian>> on Nov. 6, 2008, Jan. 21, 2003, 2 pages.
- "Parallax Scrolling", Retrieved from: <http://en.wikipedia.org/wiki/Parallax_scrolling> on May 5, 2009., May 4, 2009, 3 Pages.
- "Purple Swivel Rotating Stand Case Cover Wireless Bluetooth Keyboard for iPad Air", Retrieved From: <<http://www.ebay.com/itm/Purple-Swivel-Rotating-Stand-Case-Cover-Wireless-Bluetooth-Keyboard-for-iPad-Air-/400686726944>> Mar. 31, 2014, Mar. 2014, 9 Pages.
- "Push Notifications Overview for Windows Phone", Retrieved from: <<http://msdn.microsoft.com/en-us/library/ff402558%28VS.92%29.aspx>> on Sep. 30, 2010, Sep. 3, 2010, 1 page.
- "QNX Photon microGUI Windowing System", Retrieved from: <http://www.qnx.com/developers/docs/6.5.0/index.jsp?topic=/02Fcom.qnx.doc.photon_prog_guide%2Fdragndrop.html> on Apr. 6, 2014, 22 pages.
- "QODE Ultimate Keyboard Case for iPad (4th & 3rd gen) and iPad 2", Available at: <<http://www.belkin.com/us/p/P-F5L149/>>, Mar. 28, 2013, 8 pages.
- "Remapping the Keyboard", Retrieved from: <<http://publib.boulder.ibm.com/infocenter/hodhelp/v9r0/index.jsp?topic=/com.ibm.hod9.doc/help/assignkey.html>> on Dec. 11, 2008., Jul. 15, 2005, 5 Pages.
- "Restriction Requirement", U.S. Appl. No. 13/118,265, Feb. 27, 2014, 7 pages.
- "Restriction Requirement", U.S. Appl. No. 13/118,288, Mar. 4, 2014, 7 pages.
- "Restriction Requirement", U.S. Appl. No. 13/658,694, Feb. 6, 2013, 6 pages.
- "SAVIFY® Google NEXUS 7 Flip Stand Leather Folio Case Cover Multi-Function Smart Cover with Magnetic Auto Sleep and Wake up Sensor, Free Bonus: Clear Screen Protector + SAVFY Cleaning Cloth for Google Nexus 7 Asus Tablet Android 4.1 Jellybean 8GB / 16GB/32GB", retrieved from <http://www.amazon.co.uk/>

(56)

References Cited

OTHER PUBLICATIONS

SAVFY®-Google-Leather-Multi-Function-Magnetic/dp/B00F36H4AK on Oct. 29, 2014, 4 pages.

"SecureMe-Anti-Theft Security Application for S60 3rd", Retrieved from: <<http://www.killermobile.com/newsite/mobile-software/s60-applications/secureme-%11-anti%11theft-security-application-for-s60-3rd.htm>> on Jun. 28, 2011, Dec. 15, 2008, 3 pages.

"Snap", Windows 7 Features—retrieved from <<http://windows.microsoft.com/en-US/windows7/products/features/snap>> on Sep. 23, 2011, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 12/433,667, Aug. 1, 2013, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 12/977,584, Sep. 16, 2013, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 12/977,584, Oct. 11, 2013, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 12/978,184, Feb. 25, 2014, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 13/655,390, Sep. 19, 2013, 2 pages.

"Supplemental Notice of Allowance", U.S. Appl. No. 13/655,390, Jul. 25, 2013, 2 pages.

"Supplementary European Search Report", European Patent Application No. 10823883.3, Jul. 31, 2012, 3 pages.

"Switch between Windows of the Same App", Retrieved from <<http://www.ntwind.com/software/vistaswitcher/instance-switcher.html>> on Feb. 20, 2013, May 12, 2012, 2 pages.

"Symbian Applications", Retrieved from: <http://symbianfullversion.blogspot.com/2008_12_01_archive.html> on May 5, 2009., Jan. 2009, 51 Pages.

"TaskOS", AppBrain retrieved from <<http://www.appbrain.com/app/taskos/com.profete162.TaskOS>> on Nov. 18, 211, 2 pages.

"The Map Screen", retrieved from <<http://www.symbianos.org/whereamiusersguide>> on Jun. 17, 2011, 3 pages.

"The Start Menu (overview)", retrieved from <<http://web.archive.org/web/20101219151141/http://www.windows.microsoft.com/en-US/windows-vista/The-Start-menu-overview>> on Feb. 12, 2013, Dec. 19, 2010, 5 pages.

"ThumbJot", Retrieved form <http://thumbjot.com/wp/?page_id=8>, 2008, 2 pages.

"Tiles and Notifications for Windows Phone", Retrieved From: <<http://msdn.microsoft.com/en-us/library/windowsphone/develop/jj662933.aspx>> Apr. 1, 2014, Mar. 11, 2014, 2 Pages.

"Top 3 Task Switchers for Android", TechCredo—retrieved from <<http://www.techcredo.com/android/top-3-task-switchers-for-android>> on May 11, 2011, Mar. 9, 2011, 5 pages.

"Top Android App: Swipepad", Best Android Apps Review—retrieved from <<http://www.bestandroidappsreview.com/2011/01/top-android-app-swipepad-launcher.html>> on May 11, 2011, 4 pages.

"Touch Shell Free", Retrieved from: <<http://www.pocketpcfreeware.mobi/download-touch-shell-free.html>> on May 5, 2009., Feb. 23, 2009, 2 Pages.

"User Guide", retrieved from <<http://wireframesketcher.com/help/help.html>> on Jun. 17, 2011, 19 pages.

"USRobotics Adds 360° Rotating Folio Case/Stand for the iPad 2 to Tablet Accessory Product Portfolio", retrieved from <http://usr-lat.com/press/pr-press-release.asp?loc=mxco&prid=679> on Oct. 29, 2014, Jul. 12, 2011, 2 pages.

"What's new in Excel 2013", Retrieved From: <<http://office.microsoft.com/en-in/excel-help/what-s-new-in-excel-2013-HA102809308.aspx>> Mar. 28, 2014, Oct. 30, 2012, 5 Pages.

"Windows 8 Is Gorgeous, But Is It More Than Just A Shell? (Video)", retrieved from <<http://techcrunch.com/2011/06/02/windows-8-gorgeous-shell-video/>> on Jun. 20, 2011, Jun. 2, 2011, 6 pages.

"Windows Phone 7 (Push Notification)", retrieved from <<http://unknownerror.net/2011-06/windows-phone-7-push-notification-36520>> on Jul. 6, 2011, 4 pages.

"Windows Phone 7 Live Tiles", Retrieved from: <http://www.knowyourmobile.com/microsoft/windowsphone7/startscreen/640737/windows_phone_7_live_tiles.html> on May 11, 2011, Oct. 20, 2010, 3 pages.

"Winterface Review", Retrieved from: <<http://www.mytodayscreen.com/winterface-review/>> on Nov. 12, 2008, Jul. 9, 2008, 42 pages.

"Womma", Retrieved from: <<http://www.womma.org/blog/links/wom-trends/>> on May 5, 2009., 2007, 70 Pages.

"Working with Multiple Windows", MSOFFICE tutorial!—retrieved from <<http://www.msoffice-tutorial.com/working-with-multiple-windows.php>> on Sep. 23, 2011, 3 pages.

"You've Got Mail 1.4 Build", retrieved from <http://www.fileshome.com/Shows_Animation_Plays_Sound_Automatic_N...> on Jan. 6, 2010, Jun. 18, 2007, 2 pages.

"YUI 3: ScrollView [beta]", Retrieved from: <<http://developer.yahoo.com/yui/3/scrollview/>> on Sep. 28, 2010, 5 pages.

"ZAGGkeys PROfolio+ Keyboard", Retrieved From: <http://www.zagg.com/accessories/zaggkeys-ipad-profolio-plus-keyboard-case/7063?cj_aid=10539646&cj_pid=6146810&cj_sid=fwn62ieocicw#7063?cj_aid=10539646&cj_pid=6146810&cj_sid=fwn62ieocicw&suid=139599487284508841408342879342> Mar. 31, 2014, 2013, 9 pages.

Aguilar, "How to Run Multiple Instances of the Same App in Mac OS X", Retrieved from <<http://operating-systems.wonderhowto.com/how-to/run-multiple-instances-same-app-mac-os-x-0140144/>> on Feb. 20, 2013, Jan. 1, 2013, 4 Pages.

AI "Droptiles—Metro Style Live Tiles Enabled Web 2.0 Dashboards", Retrieved from <<http://oazabir.github.com/Droptiles/>> on Mar. 5, 2013, Jul. 18, 2012, 7 pages.

Bates, "A Framework to Support Large-Scale Active Applications", University of Cambridge Computer Laboratory—Available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.48.1690&rep=rep1&type=pdf>>, 1996, 8 pages.

Baweja, "OpenHeatMap: Create Heat Maps For Excel Spreadsheets With Geo Data", Retrieved From: <<http://www.makeuseof.com/tag/openheatmap-create-heat-maps/>> Mar. 29, 2014, Jul. 24, 2010, 4 Pages.

Beiber, et al., "Screen Coverage: A Pen-Interaction Problem for FDA's and Touch Screen Computers", In Proceedings of ICWMC 2007, Mar. 2007, 6 pages.

Bhatnagar, "Locate and Kill Annoying Processes in Windows", Trouble Fixers: All About Fixing Computer Troubles—retrieved from <<http://www.troublefixers.com/locate-and-kill-annoying-processes-in-windows/>> on Nov. 18, 2011, Apr. 19, 2010, 4 pages.

Bjork, et al., "Redefining the Focus and Context of Focus+Context Visualizations", In Proceedings of INFOVIS 2000—Available at <<http://www.johan.redstrom.se/papers/redefining.pdf>>, Oct. 2000, 9 pages.

Blankenburg, "31 Days of Mango | Day #11: Live Tiles", Retrieved from <<http://www.jeffblankenburg.com/2011/11/11/31-days-of-mango-day-11-live-tiles/>> on Mar. 5, 2013, Nov. 11, 2011, 10 pages.

Bolton, "A Slide-out Keyboard on an Android tablet. Genius or total madness?", Retrieved From: <<http://www.techradar.com/reviews/pc-mac/tablets/asus-eee-pad-slider-1036296/review>> Mar. 31, 2014, Oct. 25, 2011, 8 pages.

Bowes, et al., "Transparency for Item Highlighting", Faculty of Computing Science, Dalhousie University—Available at <<http://torch.cs.dal.ca/~dearman/pubs/GI2003-bowes,dearman,perkins-paper.pdf>>, 2003, 2 pages.

Bruzzese, "Using Windows 7, Managing and Monitoring Windows 7—Chapter 11", Que Publishing, May 5, 2010, 33 pages.

Buring, "User Interaction with Scatterplots on Small Screens—A Comparative Evaluation of Geometric-Semantic Zoom and Fisheye Distortion", IEEE Transactions on Visualization and Computer Graphics, vol. 12, Issue 5, Available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.134.4568&rep=rep1&type=pdf>>, Sep. 2006, pp. 829-836.

Carrera, et al., "Conserving Disk Energy in Network Servers", available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.6.8301&rep=rep1&type=ps>>, Nov. 2002, 15 pages.

(56)

References Cited

OTHER PUBLICATIONS

- Cawley, "How to Customize Your Windows Phone 7", Retrieved from: <<http://www.brighthub.com/mobile/windows-mobile-platform/articles/95213.aspx>> on May 10, 2011, Nov. 12, 2010, 3 pages.
- Cawley, "Windows Phone 7 Customization Tips and Tricks", retrieved from <<http://www.brighthub.com/mobile/windows-mobile-platform/articles/95213.aspx>> on Jun. 20, 2011, May 16, 2011, 2 pages.
- Cohen, et al., "Automatic Strategies in the Siemens RTL Tiled Window Manager", In Proceedings: The 2nd IEEE Conference on Computer Workstations, Mar. 7, 1988, pp. 111-119.
- Cohen, et al., "Wang Tiles for Image and Texture Generation", In Proceedings of SIGGRAPH 2003—Available at <<http://research.microsoft.com/en-us/people/cohen/WangFinal.pdf>>, 2003, 8 pages.
- Crouch, "Smartphone Wars: Micron's Slide-to-Unlock Patent", Jan. 30, 2013, 2 pages.
- Damien, "7 Ways to Supercharge Multitasking in Android", retrieved from <<http://maketechesier.com/7-ways-to-supercharge-multitasking-in-android/2011/01/22/>> on May 11, 2011, Jan. 22, 2011, 5 pages.
- Danish, "Win7sé Brings Mac-Like Screen Corners to Windows 7 & Windows 8", retrieved from <<http://technomondo.com/2011/11/13/win7se-brings-mac-like-screen-corners-to-windows-7-windows8/>> on Nov. 23, 2011, Nov. 13, 2011, 4 pages.
- Davis, "A WPF Custom Control for Zooming and Panning", Retrieved from: <<http://www.codeproject.com/KB/WPF/zoomandpancontrol.aspx>> on Sep. 28, 2010, Jun. 29, 2010, 21 pages.
- Delimarsky, "Sending Tile Push Notifications on Windows Phone 7", retrieved from <<http://mobile.dzone.com/articles/sending-tile-push>> on May 10, 2011, Aug. 25, 2010, 2 pages.
- Denoue, et al., "WebNC: Efficient Sharing of Web Applications", In Proceedings of WWW 2009—Available at <<http://www.fxpal.com/publications/FXPAL-PR-09-495.pdf>>, 2009, 2 pages.
- Dixon, "Living in the Online Cloud: The T-Mobile G1 / Google Android Smartphone", Retrieved from <http://www.manifest-tech.com/media_pda/t-mobile_g1_android.htm>, Dec. 2008, 3 pages.
- Dolcourt, "Webware", Retrieved from: <<http://news.cnet.com/webware/?categoryId=2010>> on May 5, 2009., May 5, 2009, 13 Pages.
- Dunsmuir, "Selective Semantic Zoom of a Document Collection", Available at <<http://www.cs.ubc.ca/~tmm/courses/533/projects/dustin/proposal.pdf>>, Oct. 30, 2009, pp. 1-9.
- Egan, "Modifying Live Tiles in a Background Process", Retrieved from <<http://thesociablegeek.com/windows-8/livetiles/modifying-live-tiles-in-a-background-process/>> on Mar. 5, 2013, Aug. 31, 2012, 24 pages.
- Farrugia, et al., "Cell Phone Mini Challenge: Node-Link Animation Award Animating Multivariate Dynamic Social Networks", IEEE Symposium on Visual Analytics Science and Technology, Columbus, OH, USA, Oct. 21-23, 2008, 2 pages.
- Fisher, "Cool Discussion of Push Notifications—Toast and Tile—on Windows Phone", Retrieved from: <<http://www.windowsphoneexpert.com/Connection/forums/p/4153/18399.aspx>> on Sep. 29, 2010, May 3, 2010, 3 pages.
- Friedlaender, "Better Way to Delete and Close Apps from Task Manager", retrieved from <<http://www.ideasproject.com/ideas/14475>> on Nov. 21, 2011, Nov. 15, 2011, 2 pages.
- Gade, "Samsung Alias u740", Retrieved from: <<http://www.mobiletechreview.com/phones/Samsung-U740.htm>> on Nov. 20, 2008, Mar. 14, 2007, 6 pages.
- Gao, "A General Logging Service for Symbian based Mobile Phones", Retrieved from: <http://www.nada.kth.se/utbildning/grukth/exjobb/rapportlistor/2007/rapporter07/gao_rui_07132.pdf> on Jul. 17, 2008, Feb. 2007, pp. 1-42.
- Gralla, "Windows XP Hacks, Chapter 13—Hardware Hacks", O'Reilly Publishing, Feb. 23, 2005, 25 pages.
- Greenberg, "Review: SHARKK Apple iPad Air Wireless Bluetooth Keyboard Case", Retrieved From: <<http://www.runarundtech.com/2014/01/25/review-sharkk-apple-ipad-air-wireless-bluetooth-keyboard-case/>> Mar. 31, 2014, Jan. 25, 2014, 6 Pages.
- Ha, et al., "SIMKEYS: An Efficient Keypad Configuration for Mobile Communications", Retrieved from: <<http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=01362557>> on Dec. 17, 2008, Nov. 2004, 7 Pages.
- Hahn, "Freedom Case, the Adjustable Stand and Protective Case for Microsoft Surface Tablets with Patent-Pending Folding Design, Launches Pre-Orders on Kickstarter", Retrieved From: <<http://www.prweb.com/releases/2014/02/prweb11583725.htm>> Mar. 3, 2014, Feb. 8, 2014, 4 Pages.
- Harrison, "Symbian OS C++ for Mobile Phones vol. 3", Retrieved from: <<http://www.amazon.co.uk/Symbian-OS-Mobile-Phones-Press/dp/productdescription/0470066415>> on Oct. 23, 2008, Symbian Press, Jun. 16, 2003, 4 pages.
- Hickey, "Google Android has Landed; T-Mobile, HTC Unveil G1", Retrieved from: <<http://www.crn.com/retail/210603348>> on Nov. 26, 2008., Sep. 23, 2008, 4 pages.
- Horowitz, "Installing and Tweaking Process Explorer part 2", Retrieved from <http://web.archive.org/web/20110510093838/http://blogs.computerworld.com/16165/installing_and_tweaking_process_explorer_part_2> on Mar. 12, 2013, May 23, 2010, 7 pages.
- Janecek, et al., "An Evaluation of Semantic Fisheye Views for Opportunistic Search in an Annotated Image Collection", Available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.67.3084&rep=rep1&type=pdf>>, Feb. 15, 2005, pp. 1-15.
- Jason, "Oyster Ergonomic Keyboard Review", Retrieved from <<http://allthingsergo.com/blog/reviews/oyster-ergonomic-keyboard-review/>> on Oct. 31, 2014, Oct. 16, 2014, 4 pages.
- Kandogan, et al., "Elastic Windows: Improved Spatial Layout and Rapid Multiple Window Operations", In Proceedings of the Workshop on Advanced Visual Interfaces, May 27, 1996, 10 Pages.
- Kcholi, "Windows CE .NET Interprocess Communication", Retrieved from <<http://msdn.microsoft.com/en-us/library/ms836784.aspx>> on Jul. 17, 2008., Jan. 2004, 15 Pages.
- Kendrick, "Belkin Ultimate Keyboard Case for iPad: It's the magnets (review)", retrieved from <http://www.zdnet.com/belkin-ultimate-keyboard-case-for-ipad-its-the-magnets-review-7000013164/> on Oct. 29, 2014, Mar. 27, 2013, 7 pages.
- Keranen, "OpenGL-based User Interface Toolkit for Symbian Mobile Devices", Master of Science Thesis, Tamere University of Technology, Department of Information Technology, Apr. 6, 2005, 88 pages.
- Kurdi, "Acer GridVista: snap your windows to pre-defined sections on your screen(s)", Retrieved from <<http://www.freewaregenius.com/acer-gridvista-snap-your-windows-to-pre-defined-sections-of-your-screens/>> on Jun. 30, 2013, Jan. 19, 2010, 6 pages.
- Kurdi, "WinSplit Revolution", Retrieved from <<http://www.freewaregenius.com/winsplit-revolution/>> on Jun. 30, 2013, Aug. 22, 2007, 4 Pages.
- La, "Parallax Gallery", Available at <<http://webdesignerwall.com/tutorials/parallax-gallery/comment-page-1>>, Apr. 25, 2008, 16 pages.
- Livingston, et al., "Windows 95 Secrets", 1995, I DG Books Worldwide, 3rd Edition, 1995, pp. 121-127.
- Long, "Gmail Manager 0.6", Retrieved from: <<https://addons.mozilla.org/en-US/firefox/addon/1320/>> on Sep. 29, 2010, Jan. 27, 2010, 4 pages.
- Mann, et al., "Spectrum Analysis of Motion Parallax in a 3D Cluttered Scene and Application to Egomotion", Journal of the Optical Society of America A, vol. 22, No. 9—Available at <<http://www.cs.uwaterloo.ca/~mannr/snow/josa-mann-langer.pdf>>, Sep. 2005, pp. 1717-1731.
- Mantia, "Multitasking: What Does It Mean?", retrieved from <<http://mantia.me/blog/multitasking/>> on Sep. 23, 2011, 3 pages.
- Mao, "Comments of Verizon Wireless Messaging Services, LLC", Retrieved from: <http://www.ntia.doc.gov/osmhome/warnings/comments/verizon.htm> on May 6, 2009., Aug. 18, 2000, 5 Pages.

(56)

References Cited

OTHER PUBLICATIONS

Marie, "MacBook Trackpad Four Fingers Swipe Left/Right to Switch Applications", MacBook Junkie—retrieved from <<http://www.macbookjunkie.com/macbook-trackpad-four-fingers-swipe-left-right-to-switch-applications/>> on May 11, 2011, Nov. 13, 2010, 4 pages.

Matejka, et al., "Patina: Dynamic Heatmaps for Visualizing Application Usage", In Proceedings: The SIGCHI Conference on Human Factors in Computing Systems, Autodesk Research, Toronto, Ontario, Canada, Apr. 27, 2013, pp. 3227-3236.

Mazo, "How to Switch Applications and Multitask on the Galaxy S3", Retrieved from <<http://www.androidcentral.com/how-switch-applications-and-multitask-samsung-galaxy-s3>> on Feb. 18, 2013, Jul. 17, 2012, 7 pages.

Mei, et al., "Probabilistic Multimodality Fusion for Event Based Home Photo Clustering", Retrieved from: <<http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&number=04036960>>, Dec. 26, 2006, pp. 1757-1760.

Michaluk, "Using the Application Switcher and Closing Apps When Finished to Maximize your BlackBerry Efficiency", Retrieved from <<http://crackberry.com/using-application-switcher-and-closing-apps-when-finished-maximize-your-blackberry-efficiency>> on Feb. 19, 2013, Aug. 17, 2009, 14 pages.

Mpdoolley, "SeaMonkey Hangs during Drag Operation", mozillaZine—retrieved from <<http://forums.mozillazine.org/viewtopic.php?f=5&t=1783735>> on Nov. 18, 2011, Mar. 5, 2010, 2 pages.

Nguyen et al., "BendID: flexible interface for localized deformation recognition", In Proceedings of the ACM international Joint Conference on Pervasive and Ubiquitous Computing, Sep. 13, 2014, pp. 553-557.

Nordgren, "Development of a Touch Screen Interface for Scania Interactor", Master's Thesis in C—Available at <<http://www.cs.umu.se/education/examina/Rapporter/PederNordgren.pdf>>omputing Science, UMEA University, Apr. 10, 2007, pp. 1-59.

Oliver, "Potential iPhone Usability and Interface Improvements", Retrieved from: <http://www.appleinsider.com/articles/08/09/18/potential_iphone_usability_and_interface_improvements.html> on Nov. 12, 2008, AppleInsider, Sep. 18, 2008, 4 pages.

Oryl, "Review: Asus P527 Smartphone for North America", Retrieved from: <<http://www.mobileburn.com/review.jsp?Id=4257>> on Dec. 17, 2008., Mar. 5, 2008, 1 Page.

Padilla, "Palm Treo 750 Cell Phone Review—Hardware", Retrieved from: <<http://www.wirelessinfo.com/content/palm-Treo-750-Cell-Phone-Review/Hardware.htm>> on Dec. 11, 2008., Mar. 17, 2007, 4 Pages.

Paul, "Hands-on: KDE 4.5 Launches with Tiling, New Notifications", Retrieved from: <<http://arstechnica.com/open-source/reviews/2010/08/hands-on-kde-45-launches-with-tiling-new-notifications.ars>> on Sep. 29, 2010, Aug. 2010, 3 pages.

Pendharkar, "Fluid Home Screen for Mobile Phones", Helsinki Metropolia University of Applied Sciences, Master of Engineering, Information Technology, Thesis, Available at <<http://theses17-kk.lib.helsinki.fi/bitstream/handle/10024/46481/FinalThesis3.pdf?sequence=1>>, Apr. 12, 2012, 48 pages.

Perry, "Teach Yourself Windows 95 in 24 Hours", 1997, Sams Publishing, 2nd Edition, 1997, pp. 193-198.

Raghaven, et al., "Model Based Estimation and Verification of Mobile Device Performance", Available at http://alumni.cs.ucsb.edu/~raimisl/emsoft04_12.pdf, Sep. 27-29, 2004, 10 Pages.

Rathbone, "Windows Phone 7 Live Tile Schedules—How to Execute Instant Live Tile Updates", Retrieved from <<http://www.diaryofaninja.com/blog/2011/04/03/windows-phone-7-live-tile-schedules-ndash-executing-instant-live-tile-updates>> on Mar. 11, 2013, Apr. 3, 2011, 8 pages.

Ray, "Microsoft Re-Tiles Mobile Platform for Windows 7 Era", retrieved from <http://www.theregister.co.uk/2010/02/15/windows_phone_7_series/> on May 11, 2011, Feb. 15, 2010, 2 pages.

Reed, "Microsoft Demos Windows Mobile 6.1 at CTIA", Retrieved from: <<http://www.networkworld.com/news/2008/040208-ctia-microsoft-windows-mobile.html>> on Jul. 18, 2008, Apr. 2, 2008, 1 page.

Redmond, "Mobile Marketing Solutions", Retrieved from: <http://www.mobilemarketingmagazine.co.uk/mobile_social_networking/> on May 5, 2009., Apr. 28, 2009, 16 Pages.

Rice, et al., "A System for Searching Sound Palettes", Proceedings of the Eleventh Biennial Symposium on Arts and Technology Available at <<http://www.comparisonics.com/FindSoundsPalettePaper.pdf>>, Feb. 2008, 6 pages.

Ritchie, "iOS 4 features: iPod touch Wi-Fi stays connected when asleep—iPhone too?", Retrieved from: <<http://www.goip.com/2010/06/ios-4-features-ipod-touch-wi-fi-stays-connected-when-asleep-%E2%80%94iphone-too/>> on Sep. 30, 2010, Jun. 14, 2010, 2 pages.

Ritscher, "Using Surface APIs in your WPF application—Part 1", Retrieved from: <<http://blog.wpfwonderland.com/2009/06/30/using-surface-apis-in-your-wpf-application/>> on Sep. 28 2010, Jun. 30, 2009, 7 pages.

Roberts, "Touching and Gesturing on the iPhone", Available at <<http://www.sitepen.com/blog/2008/07/10/touching-and-gesturing-on-the-iphone/comments-pare-1>>, Jul. 10, 2008, 16 pages.

Sandoval, "A development platform and execution environment for mobile applications", Universidad Autónoma de Baja California, School of Chemical Sciences and Engineering, Available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.86.7989&rep=rep1&type=pdf>>, 2004, 18 pages.

Simeone, "A Cross-Device Drag-and-Drop Technique", In Proceedings of MUM 2013, Dec. 2013, 4 pages.

Singh, et al., "Cinema: Columbia InterNet Extensible Multimedia Architecture", Available at <<http://www1.cs.columbia.edu/~library/TR-repository/reports/reports-2002/cucs-011-02.pdf>>, Sep. 3, 2002, 83 Pages.

Smith, et al., "GroupBar: the TaskBar Evolved", Proceedings of OZCHI 2003—Available at <<http://research.microsoft.com/pubs/64316/ozchi2003-groupbar.pdf>>, Nov. 2003, pp. 1-10.

Spradlin, "Switcher Provides an Incredible Gesture-based App Switching Tool", Retrieved from <<http://www.androidpolice.com/2012/07/09/switcher-proof-of-concept-hits-the-play-store-providing-an-incredible-gesture-based-app-switching-tool/>> on Feb. 18, 2013, Jul. 9, 2012, 7 pages.

Stark, "Review: Logitech Ultrathin Keyboard Cover for iPad", Retrieved From: <<http://www.gadgetguy.com.au/product/logitech-ultrathin-keyboard-cover-for-ipad/>> Feb. 26, 2014, Jun. 8, 2012, 4 Pages.

Stebih, "Windows 8 Mouse and Keyboard Commands", retrieved from <<http://www.helpdesktv.ca/windows/windows-8-mouse-and-keyboard-commands.html>> on Nov. 23, 2011, Sep. 21, 2011, 5 pages.

Steinicke, et al., "Multi-Touching 3D Data: Towards Direct Interaction in Stereoscopic Display Environments coupled with Mobile Devices", Advanced Visual Interfaces (AVI) Workshop on Designing Multi-Touch Interaction Techniques for Coupled Public, Available at <<http://viscg.uni-muenster.de/publications/2008/SHSK08/ppd-workshop.pdf>>, Jun. 15, 2008, 4 Pages.

Sun, "Clamshell Keyboard Case transforms the iPad Mini into a Laptop and Gets Raving Review from RunAroundTech.com", Retrieved From: <<http://www.prweb.com/releases/2014/01/prweb11456818.htm>> Apr. 1, 2014, Jan. 6, 2014, 3 Pages.

Suror, "PocketShield-New Screenlock App for the HTC Diamond and Pro", Retrieved from: <<http://wmpoweruser.com/?tag=htc-touch-diamond>> on Jun. 28, 2011, Oct. 23, 2008, 2 pages.

Terpstra, "Beta Beat: Grape, a New Way to Manage Your Desktop Clutter", Retrieved from: <http://www.tuaw.com/2009/04/14/beta-beat-grape-a-new-way-to-manage-your-desktop-clutter/>, Apr. 14, 2009, 4 pages.

Ueland, "25 Apps for Dropbox", Retrieved from: <<http://www.practicalecommerce.com/articles/3984-25-Apps-for-Dropbox>> on Apr. 6, 2014, Apr. 15, 2013, 10 pages.

(56)

References Cited

OTHER PUBLICATIONS

Vallerio, et al., "Energy-Efficient Graphical User Interface Design", Retrieved from: <http://www.cc.gatech.edu/classes/AY2007/cs7470_fall/zhong-energy-efficient-user-interface.pdf>, Jun. 10, 2004, pp. 1-13.

Vermeulen, "BlackBerry PlayBook Hands-on", retrieved from <<http://mybroadband.co.za/news/gadgets/20104-BlackBerry-PlayBook-hands.html>> on May 11, 2011, May 8, 2011, 4 pages.

Viticci, "Growl 1.3 to Be Released on Mac App Store, Introduce Lion Support and Drop GrowlMail Support", Retrieved from: <[http://www.macstories.net/stories/growl-1-3-to-be-released-on-mac-app-store-introduce-lion-support-and-drop-growlmail-sup-port/](http://www.macstories.net/stories/growl-1-3-to-be-released-on-mac-app-store-introduce-lion-support-and-drop-growlmail-support/)> on Jul. 22, 2011, Jul. 6, 2011, 6 pages.

Vornberger, "Bluetile", Retrieved from: <<http://www.bluetile.org>> on Sep. 29, 2010, 5 pages.

Webster, "VsNotepad: An Improved Way To Jot Down On Windows Mobile", Retrieved from <http://pocketnow.com/index.php/index.php?a=portal_detail&t=news&id=7424>, May 19, 2009, 2 pages.

Wells, "Advanced Task Killer", Android Tapp: Android App Reviews—retrieved from <<http://www.androidtapp.com/advanced-task-killer/>> on Nov. 18, 2011, Aug. 28, 2009, 15 pages.

Wilson, "How the iPhone Works", Retrieved from: <<http://electronics.howstuffworks.com/iphone2.htm>> on Apr. 24, 2009, Jan. 2007, 9 pages.

Wilson, "Robust Computer Vision-Based Detection of Pinching for One and Two-Handed Gesture Input", In Proceedings of UIST 2006—Available at <<http://research.microsoft.com/en-us/um/people/awilson/publications/wilsonuist2006/uist%202006%20taffi.pdf>>, Oct. 2006, 4 pages.

Wobbrock, et al., "User-Defined Gestures for Surface Computing", CHI 2009, Apr. 4-9, 2009, Boston, MA—available at <<http://faculty.washington.edu/wobbrock/pubs/chi-09.2.pdf>>, Apr. 4, 2009, 10 pages.

Wollman, "Sony gives the slider another shot with the VAIO Duo 13", Retrieved From: <<http://www.engadget.com/2013/06/04/sony-duo-13/>> Mar. 31, 2014, Jun. 4, 2013, 7 Pages.

Wu, et al., "Achieving a Superior Ownership Experience in Manageability and Quality for Siebel CRM", available at <<http://www.oracle.com/us/products/enterprise-manager/superior-exp-for-siebel-crm-068962.pdf>>, Aug. 2008, 25 pages.

Wyatt, "Flash/the art of parallax scrolling", .net Magazine, Aug. 1, 2007, pp. 74-76.

Yang, et al., "Dual-Surface Input: Augmenting One-Handed Interaction with Coordinated Front and Behind-the-Screen Input", Proceedings: MobileHCI '09, Sep. 15-18, 2009, Bonn, Germany—retrieved from <<http://www.cs.ualberta.ca/~wfb/publications/C-2009-MobileHCI-Yang.pdf>>, Sep. 18, 2009, 10 pages.

Yang, et al., "Semantic Photo Album Based on MPEG-4 Compatible Application Format", Retrieved from: <<http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=04146254>>, 2007, 2 Pages.

"Non-Final Office Action", U.S. Appl. No. 14/517,332, Apr. 15, 2016, 13 pages.

"Final Office Action", U.S. Appl. No. 14/516,294, May 9, 2016, 15 pages.

Ex Parte Quayle Action, U.S. Appl. No. 14/517,332, Jul. 8, 2016, 6 pages.

Final Office Action, U.S. Appl. No. 14/517,379, May 19, 2016, 18 pages.

Non-Final Office Action, U.S. Appl. No. 14/516,294, Jul. 5, 2016, 18 pages.

* cited by examiner

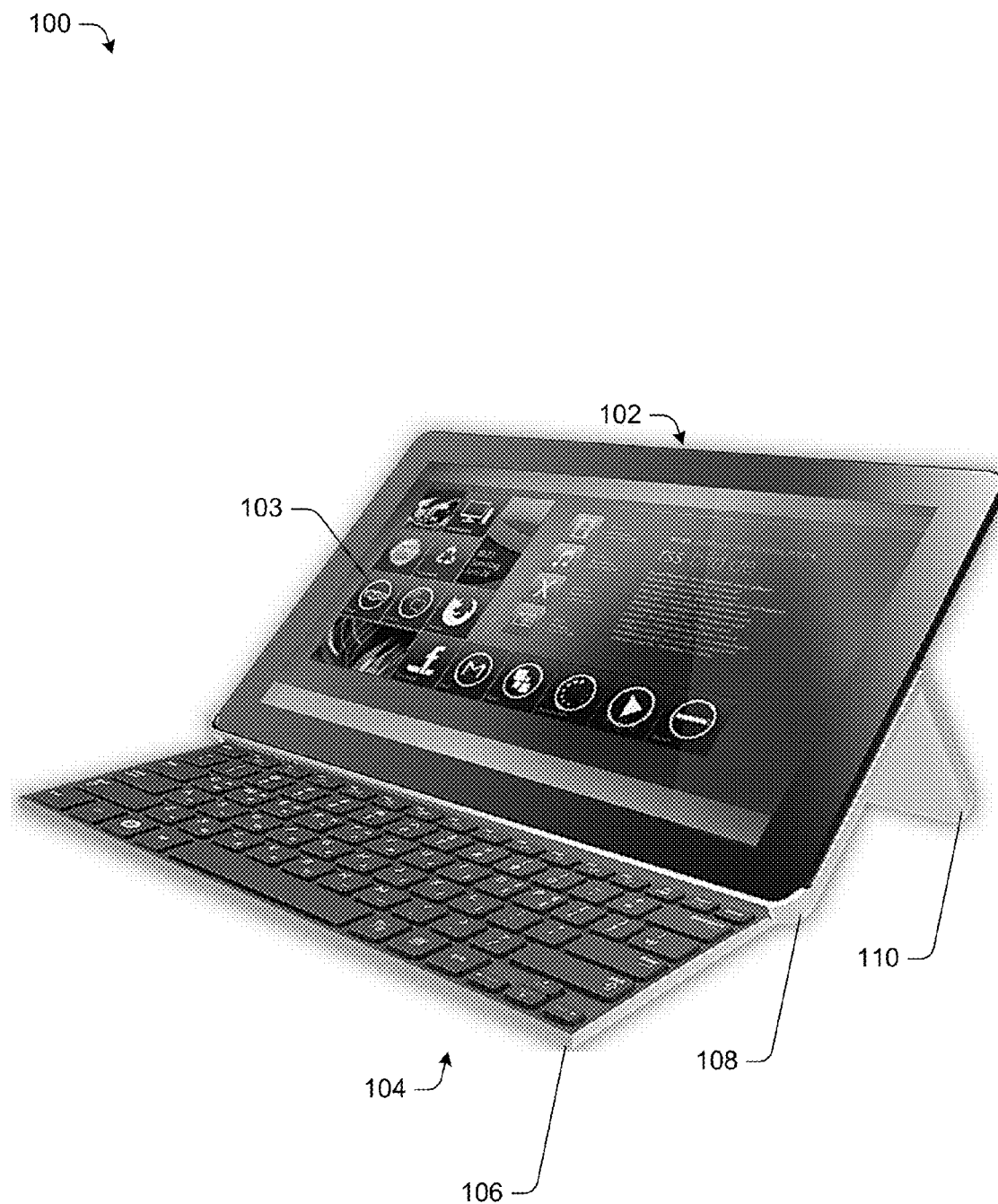


Fig. 1

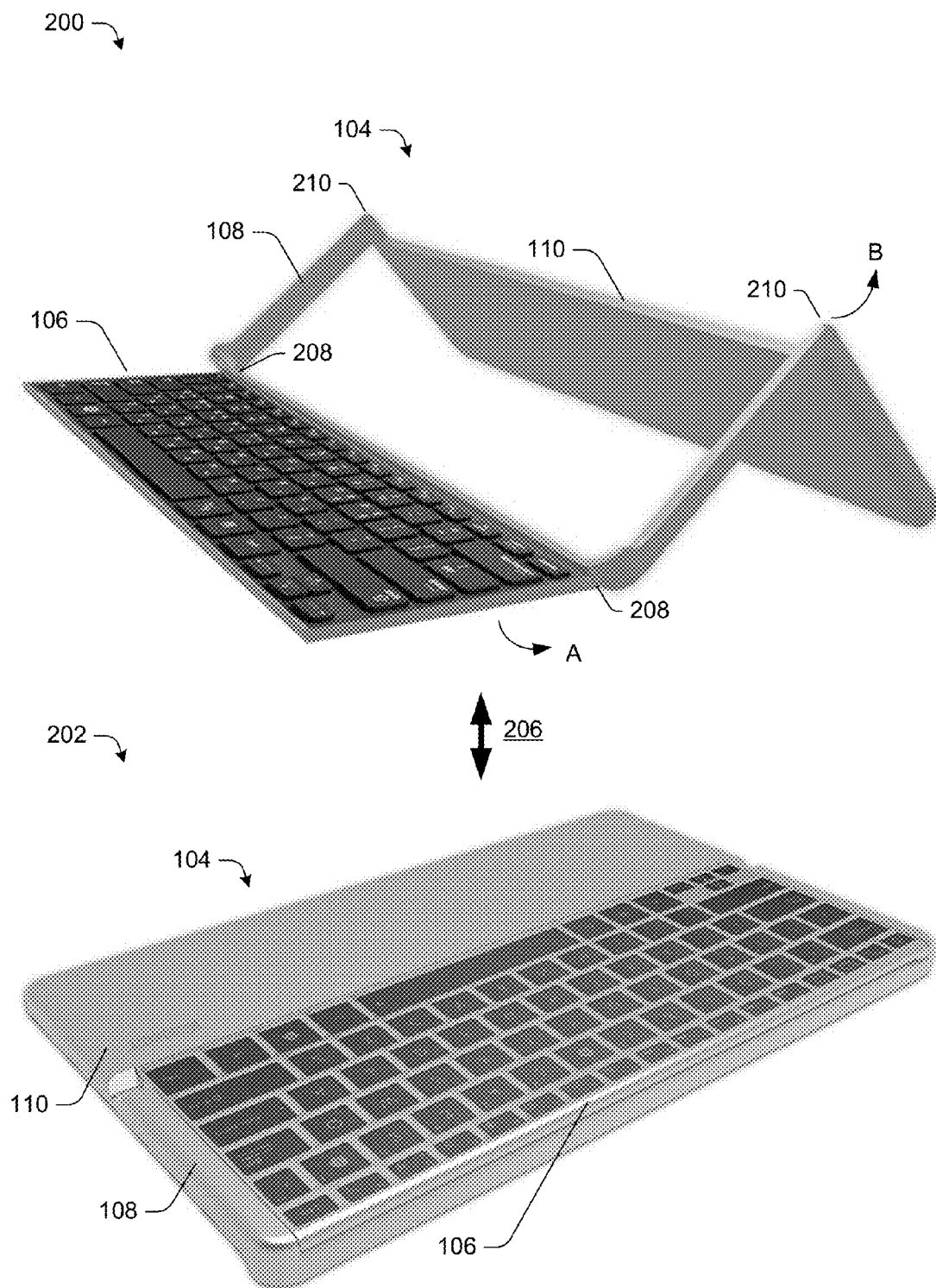


Fig. 2

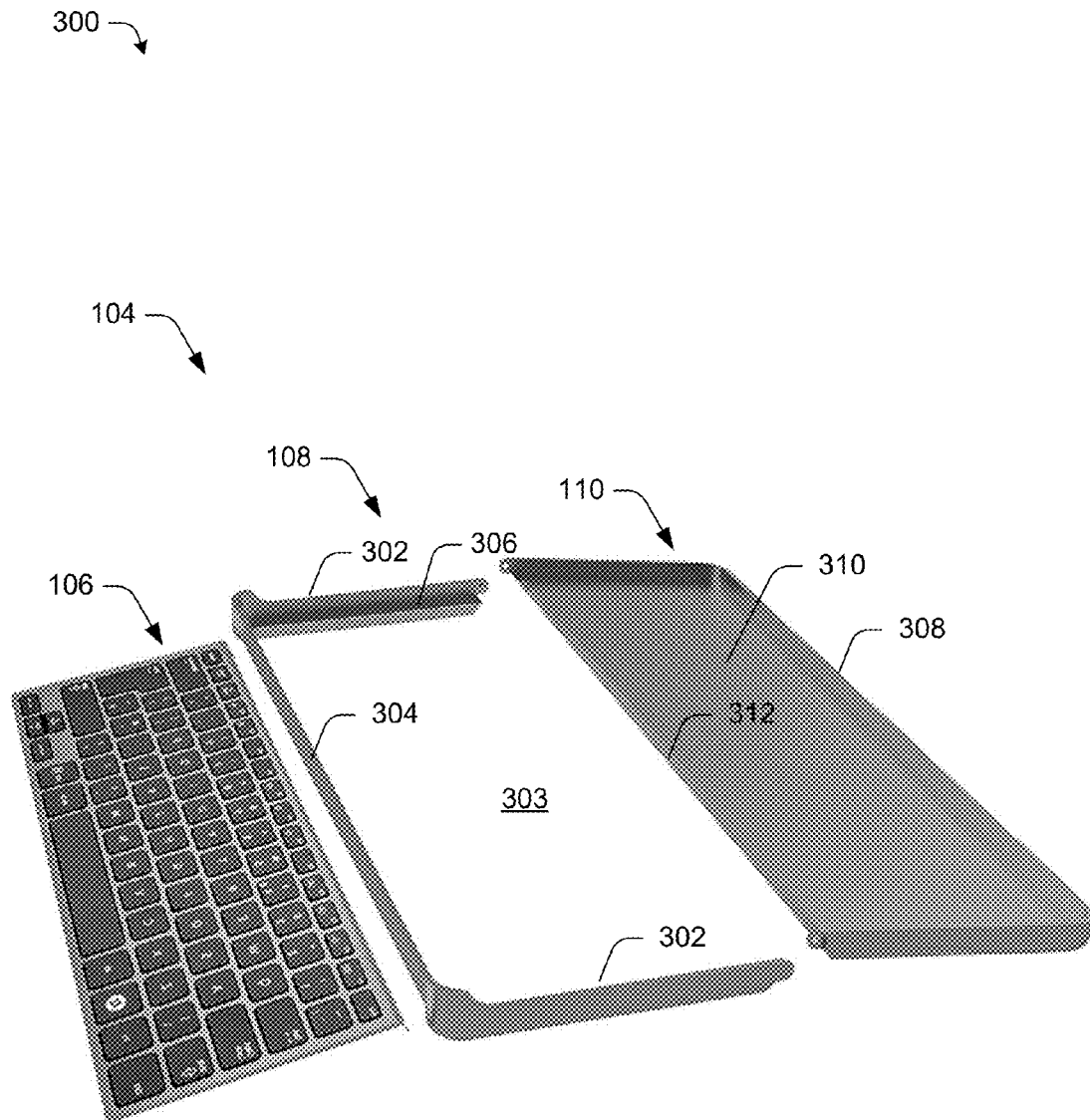


Fig. 3

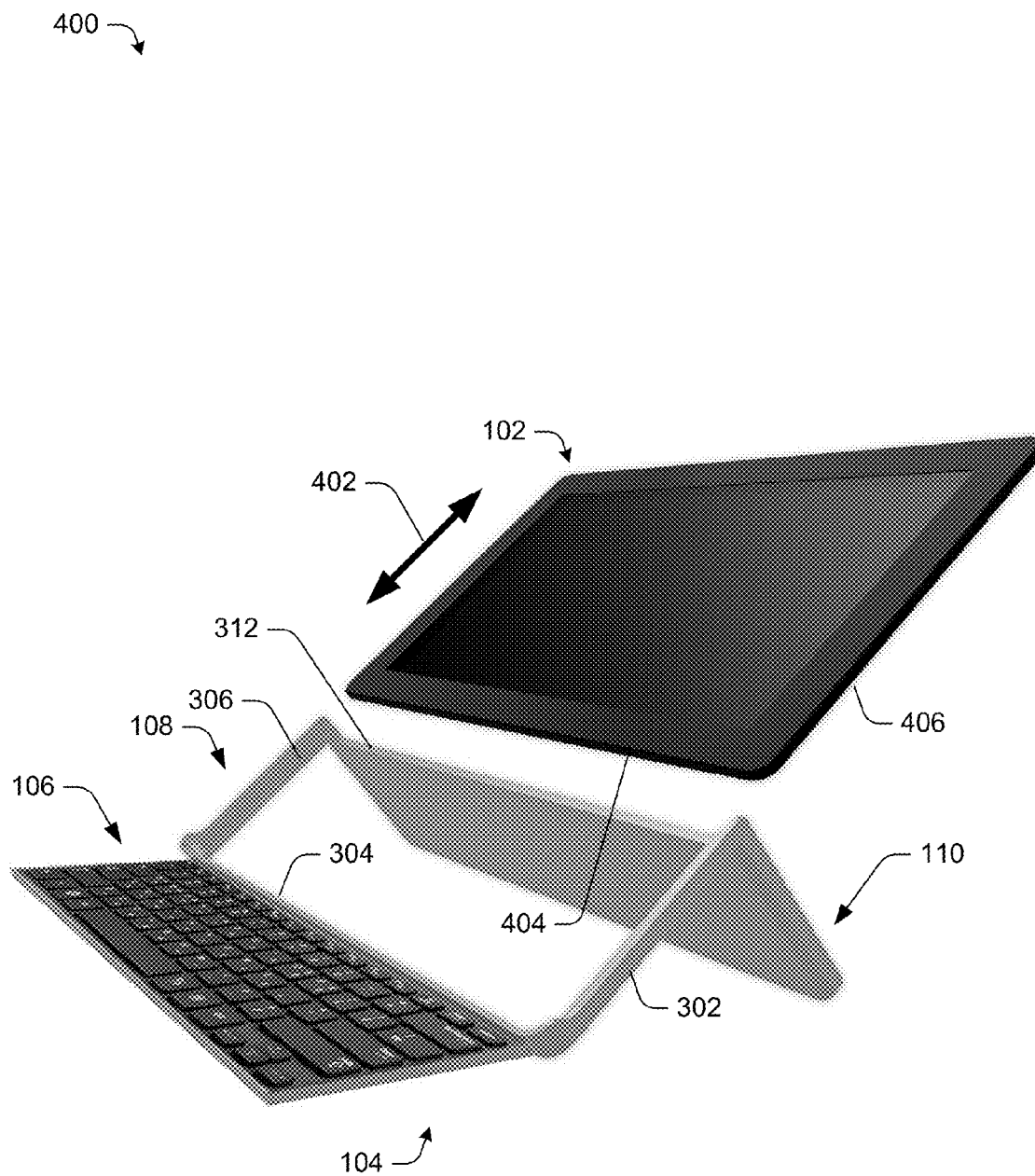


Fig. 4

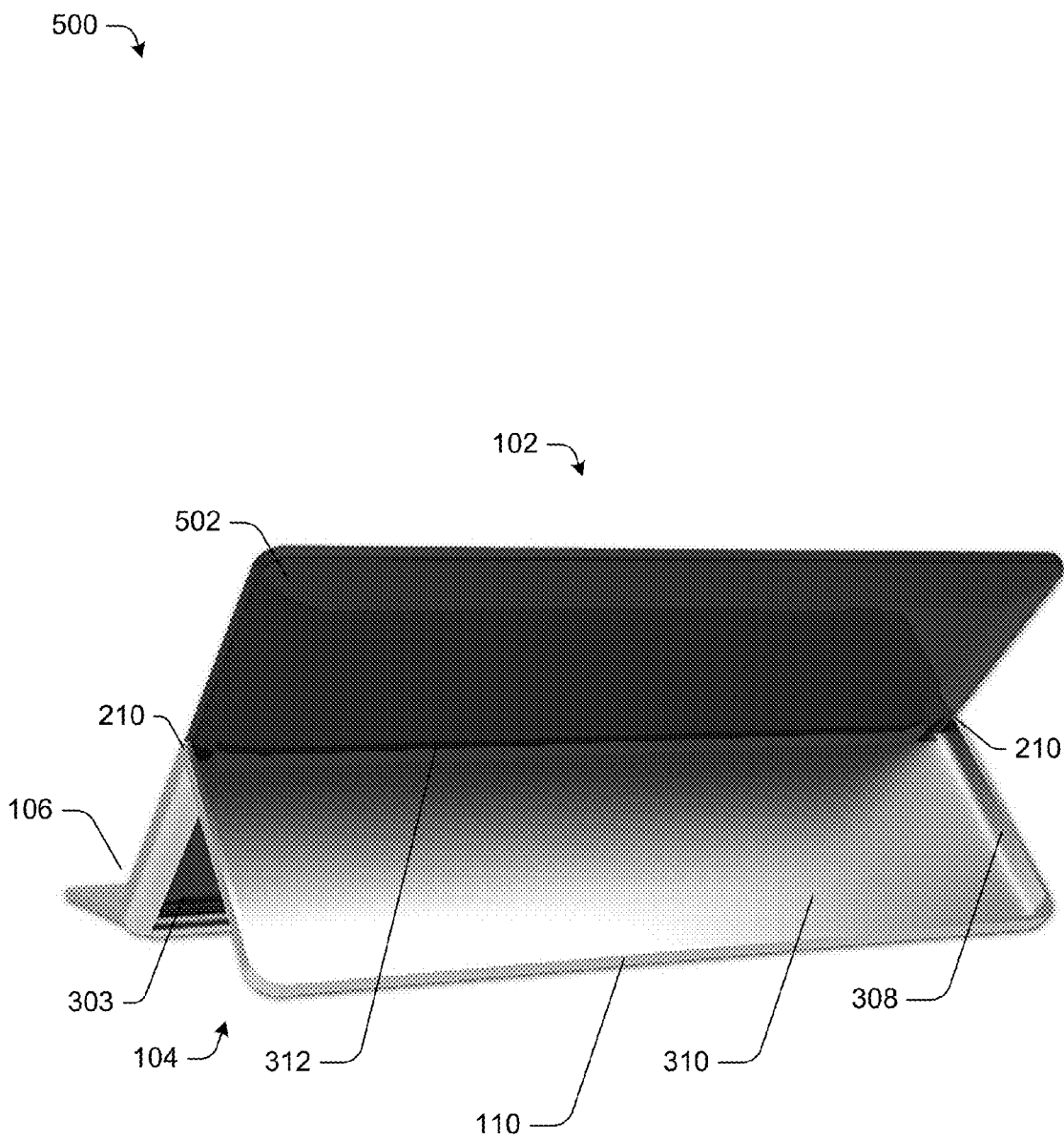


Fig. 5

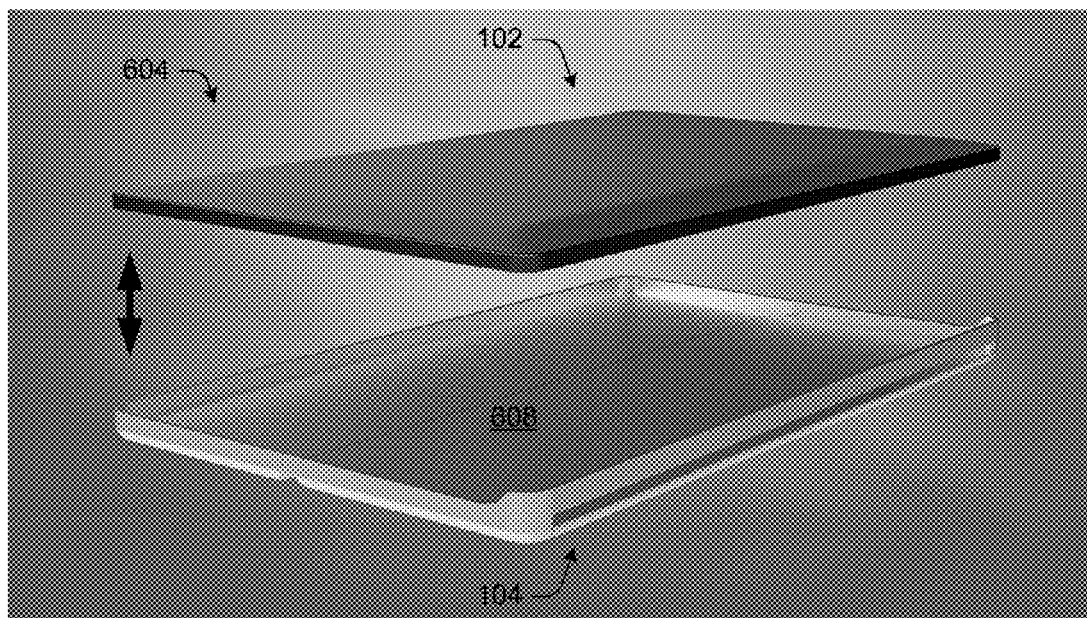
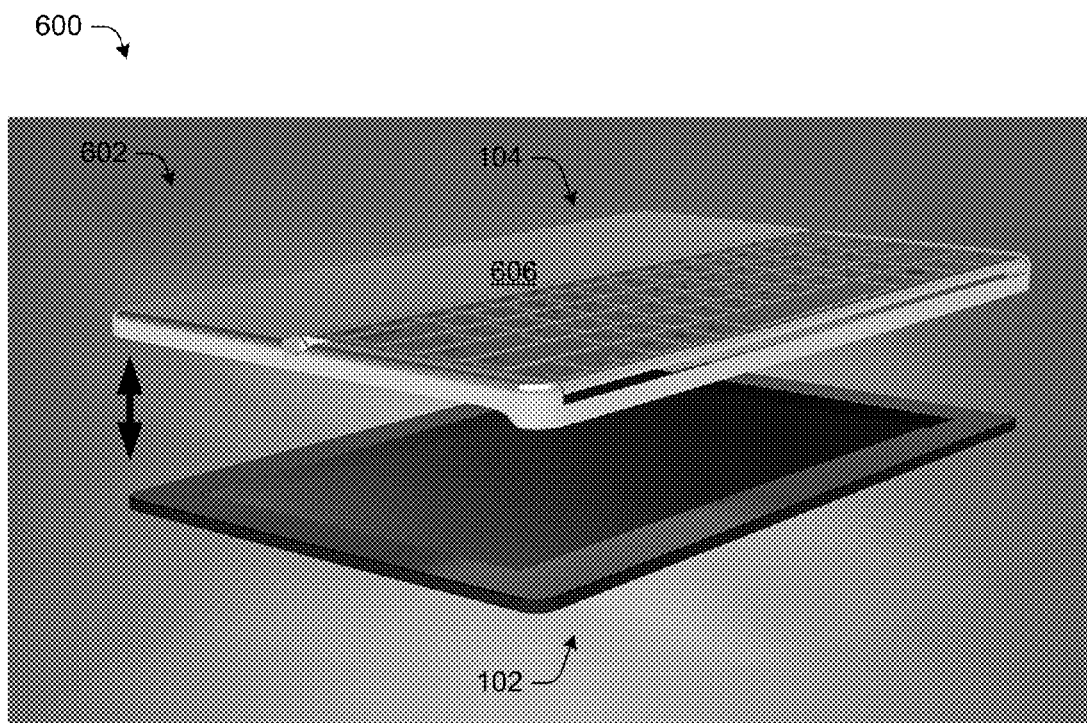


Fig. 6

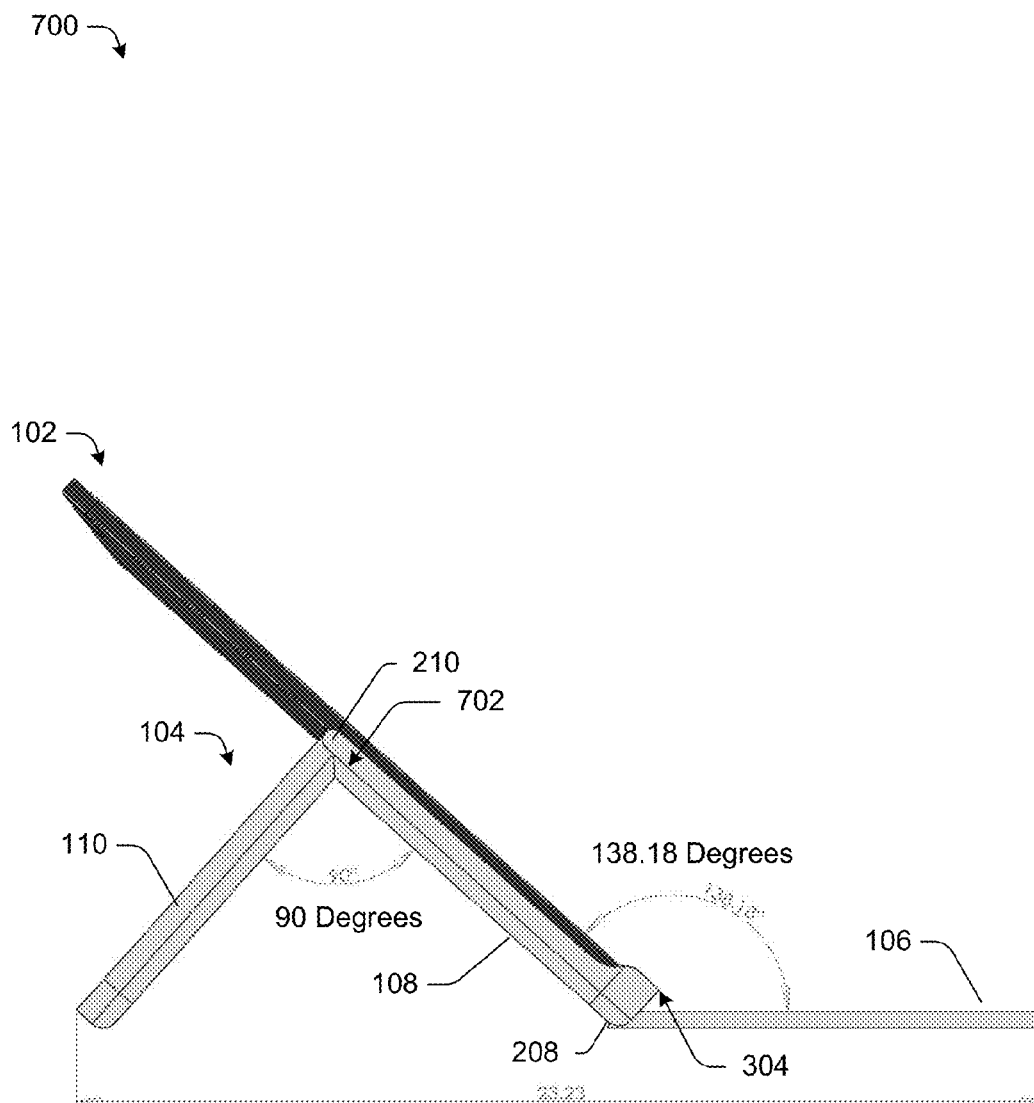


Fig. 7

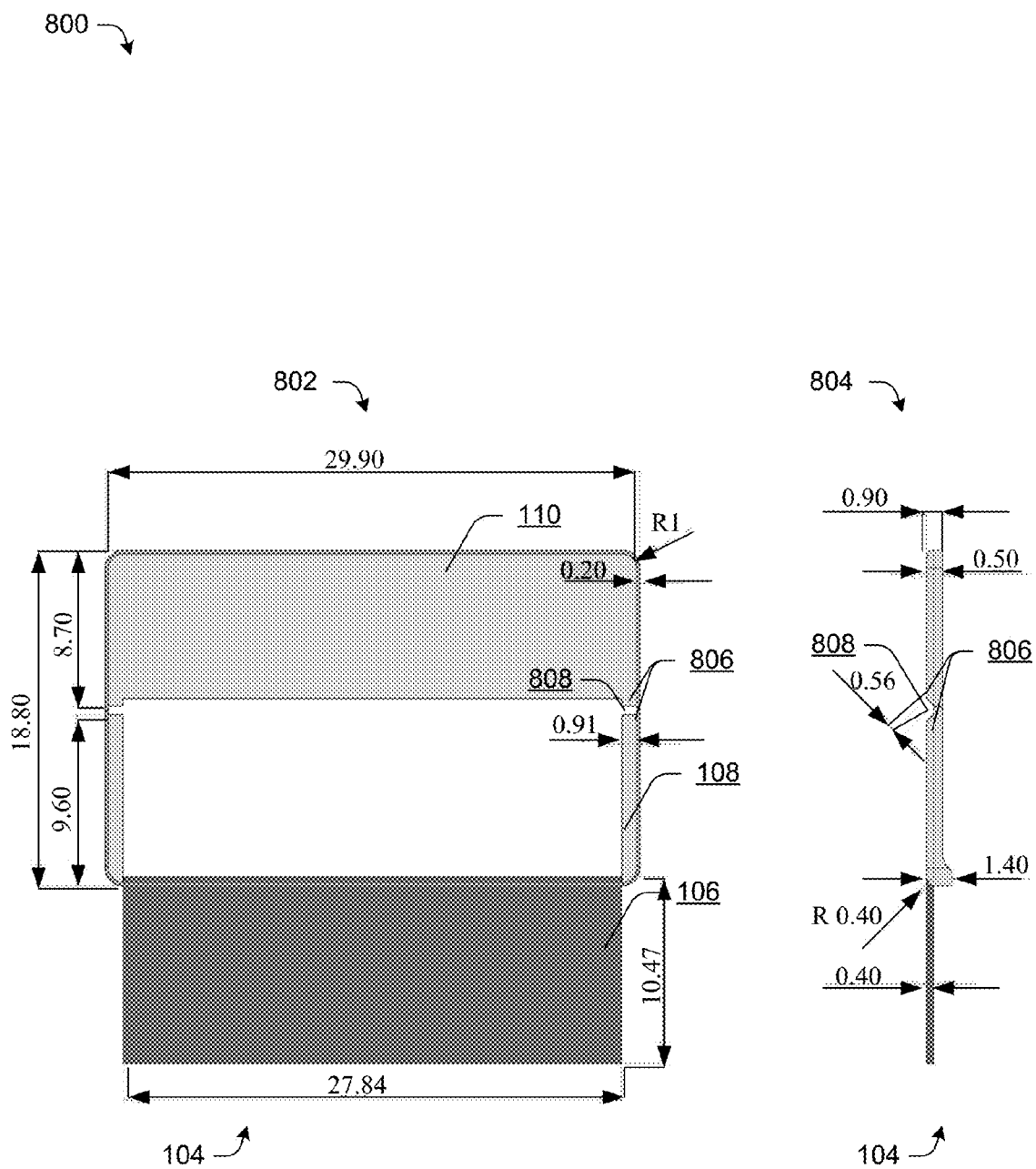


Fig. 8

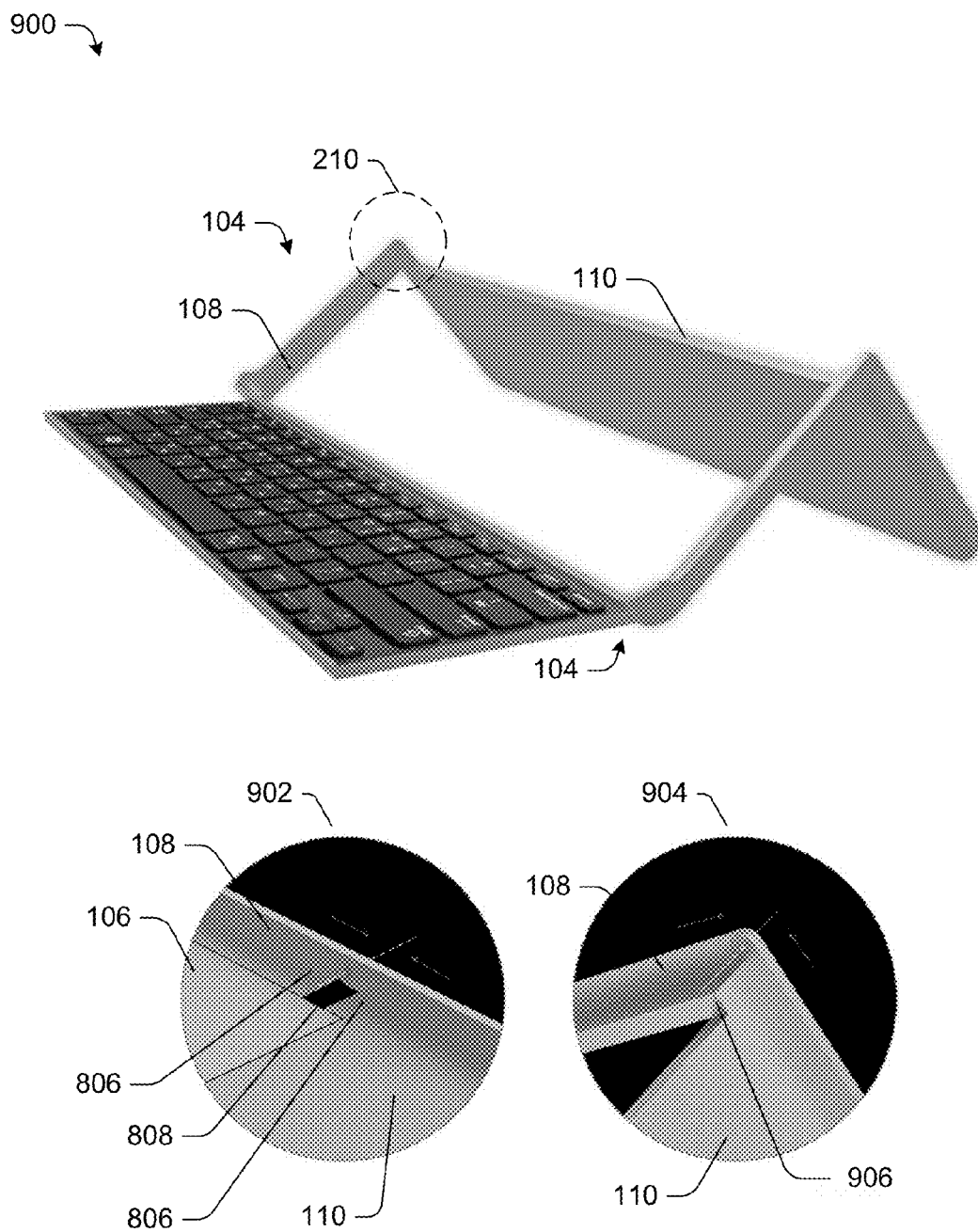


Fig. 9

1000 ↘

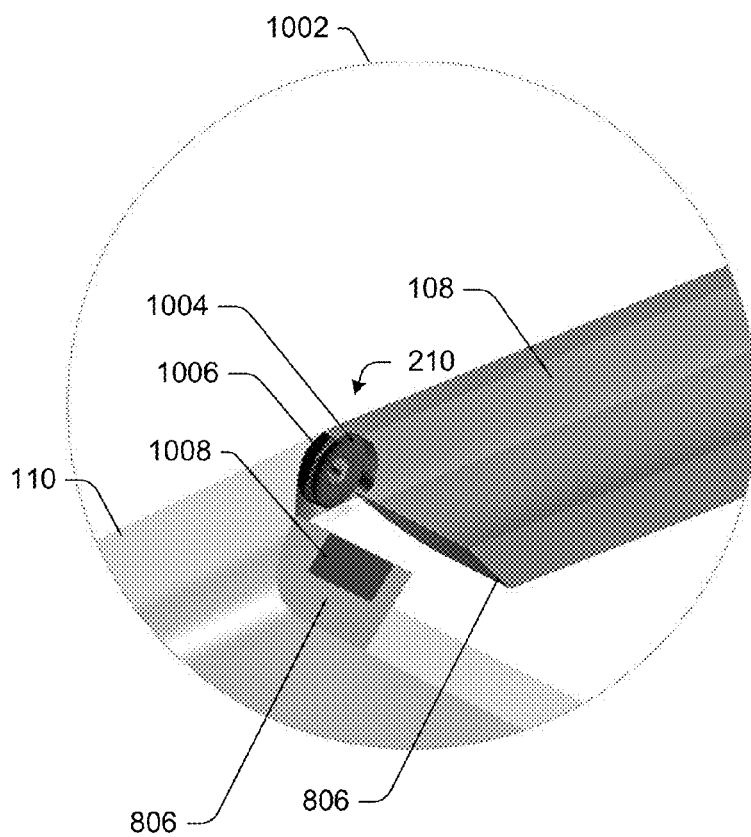


Fig. 10

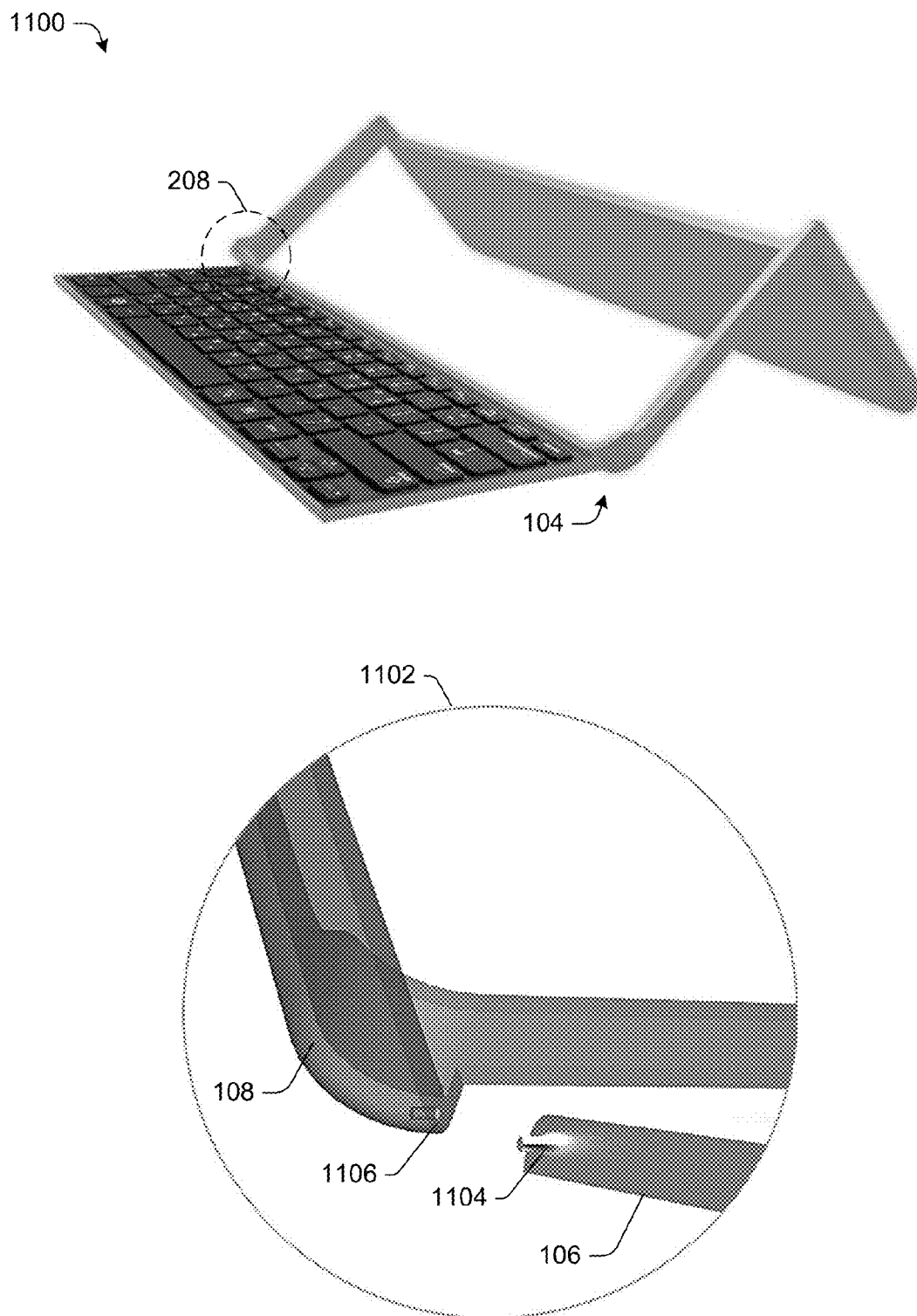
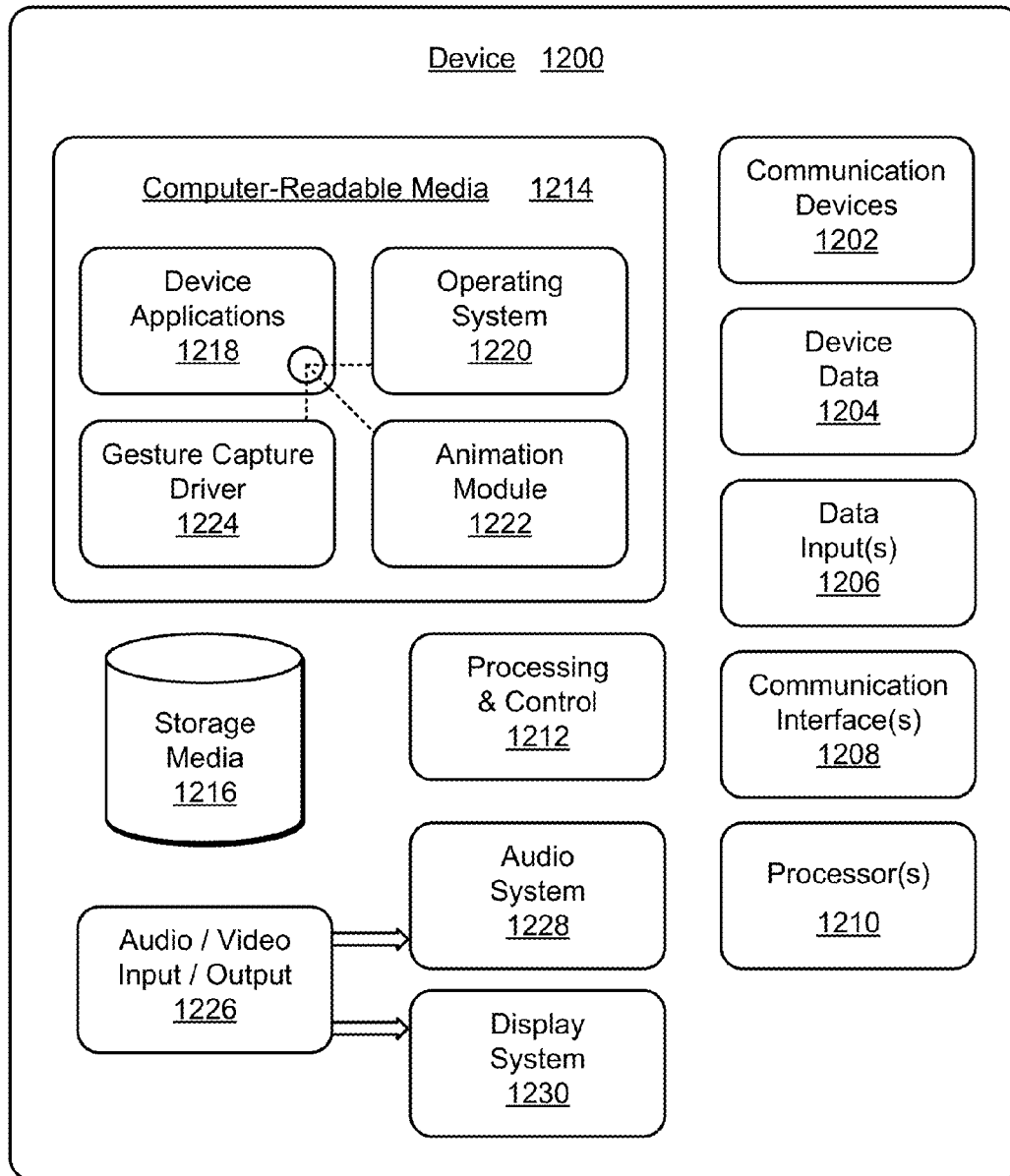


Fig. 11

1200 →

*Fig. 12*

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**COLLAPSIBLE SHELL COVER FOR
COMPUTING DEVICE****RELATED APPLICATION**

This application claims priority under 35 U.S.C. §119(d) to PCT Patent Application No. PCT/CN2014/075038, filed on Apr. 10, 2014 and titled "Collapsible Shell Cover for Computing Device," the entire disclosure of which is incorporated in its entirety by reference herein.

BACKGROUND

Users have access to an ever increasing variety of functionality in a variety of different settings. For example, users traditionally interacted with desktop computing devices (e.g., desktop PCs) to perform word processing and so forth. Mobile computing devices were then developed and began with use of simple functionality such as text messages and progressed to advanced functionality including feature-rich applications

However, the form factor of the mobile computing devices used to promote mobility of the device may limit an ability of a user to interact with this functionality in an efficient manner. For example, use of an onscreen keyboard may limit a user to basic inputs and thus even though an application may support rich features the input techniques made available to a user may limit interaction with these features.

SUMMARY

Techniques including use of a collapsible shell cover for a computing device are described. In one or more implementations, the collapsible shell cover apparatus includes a holder portion, an input device portion, and kickstand portion. The collapsible shell cover is configured to support a computing device having a slate form factor at a viewing angle in an open configuration and to form a shell cover for the computing device in a collapsed configuration. The holder portion is configured to receive the computing device between edge members having support lips to support the computing device. The input device portion and kickstand portion are rotatably secured to the holder portion along opposing ends of the edge members of the holder portion. The input device portion and kickstand portion are configured to rotate relative to the holder position to assume the open configuration in which the holder portion is positioned at the viewing angle, the kickstand portion is rotated to a support position at a rear of the holder portion, and the input device portion is rotated to an input position that extends outward from the front of the holder portion. The input device portion and kickstand portion are also configured to rotate into the collapsed configuration in which the holder portion, input device portion, and kickstand portion are aligned in a common plane to form the shell cover which corresponds to a shape of the computing device.

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description is described with reference to the accompanying figures. In the figures, the left-most digit(s) of

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a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different instances in the description and the figures may indicate similar or identical items. Entities represented in the figures may be indicative of one or more entities and thus reference may be made interchangeably to single or plural forms of the entities in the discussion.

FIG. 1 is an illustration of an environment in an example implementation that is operable to employ the collapsible shell cover computing device techniques.

FIG. 2 is diagram that depicts both an open configuration and a collapsed configuration for the apparatus.

FIG. 3 depicts an exploded view of the apparatus showing aspects of the input device portion, holder portion, and kickstand portion in greater detail.

FIG. 4 depicts generally an illustration of insertion and removal of a computing device into the apparatus.

FIG. 5 depicts a back view of a system having the apparatus with a computing device inserted into the apparatus in the open configuration.

FIG. 6 depicts views of using an apparatus as a cover to protect a computing device.

FIG. 7 depicts a side view of a system in an example implementation having the apparatus with a computing device inserted into the apparatus in the open configuration.

FIG. 8 depicts an example implementation showing an overhead view and a side view of an example apparatus with the kickstand portion collapsed and the input device portion arranged in an input position.

FIG. 9 depicts close up views of beveled portions and gaps described in relation to FIG. 8.

FIG. 10 depicts another close-up view of an example pivot point.

FIG. 11 depicts a close-up view of an example pivot point that may be employed to secure an input device portion to a holder portion.

FIG. 12 illustrates an example system including various components of an example device that can be implemented as any type of computing device as described with reference to FIGS. 1-11 to implement embodiments of the techniques described herein.

DETAILED DESCRIPTION**Overview**

The ways in which a user may interact with a mobile computing device has followed the increases in functionality of applications made available via mobile computing devices. Accordingly, mobile computing devices such as tablets and mobile phones may provided access to advanced functionality such as productivity applications (e.g., word processors, presentations, and spreadsheets) but may be limited in the ways in which interaction with this functionality is performed using conventional techniques.

Techniques including use of a collapsible shell cover for a computing device are described. In one or more implementations, the collapsible shell cover apparatus includes a holder portion, an input device portion, and kickstand portion. The collapsible shell cover is configured to support a computing device having a slate form factor at a viewing angle in an open configuration and to form a shell cover for the computing device in a collapsed configuration. The holder portion is configured to receive the computing device between edge members having support lips to support the computing device. The input device portion and kickstand portion are rotatably secured to the holder portion along

opposing ends of the edge members of the holder portion. The input device portion and kickstand portion are configured to rotate relative to the holder position to assume the open configuration in which the holder portion is positioned at the viewing angle, the kickstand portion is rotated to a support position at a rear of the holder portion, and the input device portion is rotated to an input position that extends outward from the front of the holder portion. The input device portion and kickstand portion are also configured to rotate into the collapsed configuration in which the holder portion, input device portion, and kickstand portion are aligned in a common plane to form the shell cover which corresponds to a shape of the computing device.

In the following discussion, an example environment is first described that may employ the techniques described herein. Example procedures are then described which may be performed in the example environment as well as other environments. Consequently, performance of the example procedures is not limited to the example environment and the example environment is not limited to performance of the example procedures.

Example Environment

FIG. 1 is an illustration of an environment 100 in an example implementation that is operable to employ techniques described herein. The illustrated environment 100 includes a computing device 102 and an apparatus 104 that may function as a collapsible shell cover for the computing device 102. The computing device 102 may be configured in a variety of ways.

For example, a computing device may be configured as a mobile computing device having a housing formed according to a slate configuration. The housing is configured to support a display device 103, which may incorporate touchscreen functionality to support user interaction with a user interface displayed on the display device 103, such as a start screen as illustrated. A surface of the computing device from which the display device 103 is viewed may be referred to herein as a front side of the computing device and an opposing surface may be referred to as a back side of the computing device. Mobile computing devices may take a variety of different forms in the slate configuration, such as a tablet, mobile phone, portable game device, portable media player, and so forth. Thus, the computing device 102 may range from full resource devices with substantial memory and processor resources (e.g., tablet computers) to a low-resource device with limited memory and/or processing resources (e.g., traditional portable media players). Further discussion of an example of a computing device 102 may be found in relation to FIG. 12.

The apparatus 104 may include an input device portion 106, a holder portion 108, and a kickstand portion 110 that may be secured one to another and manipulated relative to one another to assume multiple different configurations in various ways described herein. The apparatus 104 may be formed out of various material including one or a combination of aluminum, magnesium, various metal alloys, plastics, rubber, and so forth. In one approach, the apparatus 104 may be formed entirely of a metal or metal alloy, such as aluminum. In the illustrated example, the computing device 102 and the apparatus 104 are depicted as being arranged in an open configuration that supports interaction with the display device 103 (e.g., to view the device and/or interact with touchscreen functionality). The open configuration also supports input functionality of the apparatus 104 provided via interaction with the input device portion 106. The input

device portion 106 is configured to provide one or more inputs to the computing device 104 to initiate one or more operations of the computing device 104. The input device portion 106 may be configured in a variety of ways to accept inputs from a user, such as being a keyboard as illustrated, a track pad, functionality configured to detect gestures, a camera, and so on. The inputs may be communicated in a variety of way, such as via a physical communicative coupling, a wireless communicative coupling (e.g., Bluetooth®, Wi-Fi®), and so forth. Output functionality may also be incorporated by the apparatus 104 to cause outputs as indicated by the computing device 102. Examples of output functionality include supplemental display devices (e.g., an electronic ink display), speakers, lighted indications, and so on. A variety of other functionality may also be incorporated within the apparatus 104, such as a supplemental power source, e.g., battery.

In the open configuration, the apparatus 104 is configured to support the computing device 102 at a viewing angle as depicted. The holder portion 108 is designed to secure the computing device 102 removably within the apparatus, and the kickstand portion 110 is designed to provide support generally at a back side of the apparatus (e.g., a side that opposes the display device) for maintaining the holder portion 108 and computing device at the viewing angle. Accordingly, the apparatus 104 is also configured to support placement of the computing device 102 and apparatus 104 on a surface (e.g., a table, a user's lap) to type on the keyboard and position a surface of the display device 106 at an angle relative to the surface.

The apparatus 104 is also configured to assume a collapsed configuration in which the apparatus 104 forms a shell cover that may be employed to protect the computing device 102, such as by inserting the computing device 102 into the shell cover with the display device 103 facing inward thereby protecting the display device 103 from damage. Details regarding the open and collapsed configurations that the apparatus 104 may assume and the components of the apparatus are described in relation to the following figures.

In particular, FIG. 2 is diagram that depicts both an open configuration 200 and a collapsed configuration 202 for the apparatus 104 without the computing device 102 of FIG. 1. FIG. 2 also represents a transition 206 between the two illustrated configurations. The apparatus 104 includes input device portion 106 and the kickstand portion 110, which are rotatably secured to the holder portion 108. In an implementation, the input device portion 106 and the kickstand portion 110 are secured at respective pivot points 208, 210 that enable rotation of the components one to another to assume the different configurations. The pivot point may be implemented in various ways such as using hinges, pins, snap-in connection, spring mechanisms, and other devices suitable to establish rotatable connections.

In the open configuration 200, the apparatus 104 is configured to support a computing device at a viewing angle that is established by a position of the holder portion 108. In particular the computing device may be inserted into the apparatus 104 (as shown in FIG. 1) such that edges of the computing device fit within a perimeter of the holding portion 108 and a back side of the computing device rests upon and is held upright at the viewing angle by the kickstand portion 110.

Accordingly, the kickstand portion 110 is rotated to a support position at a rear of the holder portion that opposes a front of the holder portion 108 configured to receive the computing device. In an implementation, the kickstand

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portion 110 in the support position is substantially perpendicular to a plane in which the computing device is inserted into the apparatus (e.g., a plane corresponding to the perimeter of the holding portion 108 and sides of the device (e.g., display surface and back side)). The input device portion 106 is rotated to an input position that extends outward from the holder portion 108 such that input device portion 106 is arranged to lay substantially flat in front of the holder and/or a display device 103 of a computing device 102 in the holder when that apparatus is placed on a surface (e.g. a table, couch, a user's lap). However, other angles between the holding portion and the kickstand portion may be appropriate."

In the collapsed configuration 202, the holder portion 108, input device portion 106, and kickstand portion 110 are aligned in a common plane to form a shell cover for protection of the computing device that corresponds a shape of the computing device. The shell cover may be designed to fit tightly over a display device 103 and at least partially around edges of the computing device to protect the display and create an attachment of the cover to the device. The shell cover has a shape that generally corresponds a shape of the device, such as a rectangular shape for a slate form computing device. For example, the shell cover may have a shape like a tray with raised edges surrounding a flat interior surface to create an interior cavity or "shell" into which the computing device may be inserted. The raised edges are designed to surround and frame the edges of the computing device and hold the cover in place when the computing device is inserted into the shell cover.

In order to assume the collapsed configuration 202, a transition 206 may occur in which the input device portion 106 portion is rotated inward and underneath the holder portion 108 as represented by the curved arrow "A". As discussed in greater detail below, the input device portion 106 in the collapsed configuration 202 may be configured to fit within a perimeter of the holder portion 108 so as to fill open space within the interior of the holder. The transition 206 may additionally involve rotation of the kickstand portion 110 out and away from the holder portion 108 as represented by the curved arrow "B" such that the peaks shown at the pivot points 210 collapses downward and the kickstand portion 110 flattens down in-line with the holder portion 108. Accordingly, in the collapsed configuration 202, the holder portion 108, input device portion 106, and kickstand portion 110 are folded together into a common plane and flush one to another such that interior and exterior surfaces of the shell cover formed in the collapsed configuration 202 are substantially flat and planar. A transition back the open configuration involves rotation of the input device portion 106 and kickstand portion 110 opposite of the directions illustrated in the example of FIG. 2.

FIG. 3 depicts generally at 300 an exploded view of the apparatus 104 showing aspects of the input device portion 106, holder portion 108, and kickstand portion 110 in greater detail. As noted, the input device portion 106 and kickstand portion 110 may be rotatably attached to the holder portion 108. In an implementation, either of both of the input device portion 106 and kickstand portion 110 may be removably attached. In the case of the input device portion 106 for instance, the input device portion 106 may be detached from the holder portion 108 to enable wireless use of the input device portion when removed. The input device portion 106 may then be reattached to the holder portion 108 for use in the open configuration and to enable the collapsed configuration.

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The input device portion 106 may have a rectangular shape as shown, although other configurations are also contemplated.

The holder portion 108 as shown in FIG. 3 may be configured as a frame that includes edge members 302 separated by open interior space 303 and at least one cross beam member 304 that spans the open interior space 303 and connects the edge members 302. The cross beam member 304 is designed to support the computing device 102 along a bottom edge when inserted into the holder in the open configuration and restrict the computing device from sliding out of the holder toward the front of the apparatus in the direction of the input device/keyboard. Here, the holder portion 108 is illustrated as a three-sided frame that include a pair of edge members connected by a cross beam member 304 on one side and open on an opposing side. Alternatively, another additional cross beam member may be employed on the opposing side in some implementations to form a complete four-sided frame component. Each of the edge members 302 may include a lip portion 306 that extends along the length of the edge member. The lip portions 306 provide support for the computing device in the open configuration and may act as rails to facilitate slidable insertion of a computing device into and out of the holder portion 108. In one or more implementations, the lip portions can form an "L" shaped ridge to slidably receive the input device, from a friction mount to "snap in" the input device, form a loose alignment and/or stabilizer to loosely receive the input, or any other suitable form of connection.

The lip portions 306 also form part of the interior and exterior surfaces of the shell cover in the collapsed configuration. If an additional cross beam member is employed, the additional cross beam member may be arranged perpendicularly to the depicted cross beam member 304 and in a plane flush with the interior surface of the lip portions 306 so as not to interfere with insertion of a computing device into the holder.

The kickstand portion 110 as shown in FIG. 3 is configured as a partial tray or shell. In particular, the kickstand portion 110 has raised edges 308 on three sides surrounding an interior planar surface 310. The kickstand portion 110 additionally includes a leading edge 312 that a back side of the computing device may rest upon for support when the kickstand portion 110 is rotated to a support position for the open configuration, as mentioned previously.

When attached together and arranged flat, the holder portion 108 and the kickstand portion 110 form a perimeter of raised edges for the shell cover or in other words a complete frame. In this arrangement, the interior planar surface 310 of the kickstand portion 110 and the interior surface of the lip portions 306 are substantially flush to each other in a common plane. This combination of just the holder portion 108 and the kickstand portion 110 still includes the open interior space 303 and thus would create an incomplete shell cover.

However, the input device portion 106 is designed to fill the open interior space 303 in the collapsed configuration. In other words, the shape of the input device portion 106 corresponds to shape of the open interior space 303 such that a complete shell cover is formed in the collapsed configuration. A surface of the input device portion 106 that ends up in the interior of the shell cover is also aligned with the interior planar surface 310 of the kickstand portion 110 and the interior surface of the lip portions 306 in a common plane to form a planar surface on the interior of the shell cover. Taken together, the combination of the input device portion 106 and the holder portion 108 also form a partial

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tray or shell that is designed to mesh with and complement the partial tray or shell of the kickstand portion 110 to form the completed shell. In an implementation, the kickstand portion 110 and the combination of the input device portion 106 and the holder portion 108 each provide approximately half of the shell cover, although other variations may use different complementary splits for partial components of a shell cover.

An exterior of the shell cover that is formed in the collapsed configuration may also be planar and substantially flat. In one approach, keys and/or other input mechanisms of the input device portion 106 are configured to retract into a body of the input device portion 106 to form a smooth surface and/or deactivate, thereby preventing unintended input when the input device portion 106 is rotated inward to fill the open interior space 303. This may be accomplished using a mechanical switch, an electrical sensor, a combination of switches and sensors, or other mechanism/devices to detect the rotation and trigger the retraction and/or deactivation. When the input device portion 106 is rotated back to an input position in the open configuration, the keys and/or other input mechanisms may pop-out or otherwise be re-exposed and activated to enable input interaction.

For example, the input device portion 106 may be configured as a keyboard having a plurality of mechanical keys. The plurality of mechanical keys are configured to retract into a body of the keyboard in the collapsed configuration to form a flat surface for an exterior of a shell cover and then pop-out of the body of the keyboard to enable input interaction in the open configuration. In this way, a flat and smooth surface for the exterior of the shell cover may be achieved in the collapsed configuration. The mechanical keys may also be activated in the open configuration and de-activated in the collapsed configuration.

In addition or alternatively, non-retractable input mechanisms may be employed using any or a combination of electrical and mechanical devices or implementations. In this case, the non-retractable input mechanisms may still be activated and de-activated in the open and collapsed configurations respectively, responsive to rotation of the input device portion to assume the different configurations.

FIG. 4 depicts generally at 400 an illustration of insertion and removal of a computing device into the apparatus 104. In particular, when the apparatus is in the open configuration, a computing device 102 may be removably inserted into or taken out of the holder portion 108 as represented by the arrow 402. One way this may occur is by sliding the computing device 102 along the edge members 306 of the holder and over the leading edge 312 of the kickstand 110. In addition or alternatively, the holder portion 108 may be configured to enable a computing device to snap-in and snap-out of the holder.

When the computing device 102 is inserted, the cross beam member 304 supports the computing device 102 along a bottom edge 404 and restricts the computing device from moving downward. The edge members 302 secure the computing devices along corresponding side edges 406 and may restrict lateral movement. The leading edge 312 supports the device on the back side of the computing device. In an embodiment, a support angle formed between the kickstand 110 and the holder portion 108 is about ninety degrees in the open configuration. Accordingly, the kickstand 110 may provide angular support the computing device 102.

FIG. 5 depicts generally at 500 a back view of a system having the apparatus 104 with a computing device 102 inserted into the apparatus in the open configuration. In this

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view, a back side 502 of the computing device 102 is shown. Note that the back side 502 is supported by the kickstand portion 110 and in particular by the leading edge 312. Additionally, the tray or shell shape of the kickstand portion 110 having the raised edges 308 and interior surface planar 310 is exposed in the depicted example. Further, attachment of the kickstand portion 110 at pivot points 210 is shown.

Observe that the partial tray or shell of the kickstand portion may rotate upward via the pivot points 210 such that the portion of the computing device 102 that extends over the leading edge 312 fits within the interior of the partial tray or shell. Additionally, the input device portion 106 (a portion of which is shown) may be rotated down and around to fill the open interior space 303 (a portion of which is shown) associated with the holder portion 108 in the manner described previously to form the collapsed configuration. In this arrangement, the shell cover may be attached on the back side 502 of the device and the display device 103 may be exposed on the front side for interaction in a tablet-mode without the use of the input device portion 106. Of course the computing device 102 may also be removed from the apparatus 104, turned around, and inserted with the display device first into the shell cover for protection of the display device 103, such as when the computing device is being transported and/or is not being used.

FIG. 6 depicts generally at 600 views 602 and 604 of using an apparatus 104 as a cover to protect a computing device 102. As noted the apparatus in the collapsed configuration may form a shell cover that as illustrated has a substantially flat exterior surface 606 that is formed by the input device portion, holder portion, and kickstand portion being folded together. In view 602, the apparatus 104 in the collapsed configuration is shown as being fitted over a computing device 102. Alternatively, the computing device 102 may be inserted within a cavity of the shell cover formed by the apparatus 104. Keys of a keyboard and/or other mechanical features of an input device may retract in the collapsed configuration as is represented for the flat exterior surface 606 and was discussed previously. View 604 is an inverted view of the view 602 that shows a substantially flat interior surface 608 for the shell cover into which the computing device 102 is received. Here, the input device portion, holder portion, and kickstand portion align in a common plane to form the flat interior surface 608.

FIG. 7 depicts generally at 700 a side view of a system in an example implementation having the apparatus 104 with a computing device 102 inserted into the apparatus in the open configuration. In the depicted implementation, the kickstand portion 110 is rotated at a support angle of approximately ninety degrees relative to the holder portion 108 via the pivot point 210. In one approach the kickstand portion 110 and holder portion 108 may both have beveled edges that are configured to meet to form the support angle as shown at 702. For example, at least portions of leading edge that aligns with edge members 302 may be beveled. Likewise ends of the edge members 302 or lips 306 of the holder may have a complementary bevel such that the bevels couple one to another in open configuration to form the designated support angle. The coupling of the beveled edges in the open configuration produces a self-supporting support structure for supporting the computing device and the apparatus itself. For a ninety degree support angle, forty-five degree bevels may be employed for opposing edges. Although an angle of approximately ninety degrees is depicted, other support angles may be used in some scenarios. The opposing bevels when rotated together prevent over-rotation and produce the supporting structure for the apparatus 104. In an implemen-

tation a fastening mechanism such as a magnetic closure device, spring pins, hook and loop fasteners, and so forth may be employed to couple opposing bevels together and thereby increase an amount of force applied to de-couple the closure and collapse the apparatus. This may prevent the apparatus from collapsing unexpectedly and/or under the influence of relatively small applied force.

The example of FIG. 7 additionally depicts the computing device 102 and holder portion 108 as being supported by the kickstand portion 110 at a viewing angle of approximately one-hundred and thirty eight point one eight degrees relative to the input device portion 106 and/or a surface upon which the apparatus is placed. Again, different arrangements may achieve different support angles and viewing angles for different use scenarios. Additionally, an apparatus may support multiple different viewing modes in which the kickstand portion 110 may assume multiple “open” positions thereby creating multiple viewing options. For example, the kickstand portion 110 may be configured to support the holder portion 108 and computing device 102 at multiple different support positions for viewing angles in a range of ninety to one-hundred and eighty degrees.

The curved or cupped shape or any appropriate shape such as an “L” shape may be designed to extend slightly over a bottom edge of the device being supported to securely (or in some cases loosely) hold the device and made it less likely that the device will flip out of the holder portion 108 when in either or both of the open position and the closed position.

The side view of FIG. 7 additionally shows the cross beam member 304 as having a curved or cupped shape. The curved or cupped shape (or any other appropriate shape such as an “L” shape) may be designed to extend slightly over a bottom edge of the device being supported to securely (or in some cases loosely) hold the device and make it less likely that the device will flip out of the holder portion 108, when in either or both of the open position and the closed position.

Although not shown, the cross beam member 304 may include a connection interface (e.g., a multi-pin slot, adapter, or other connector) designed to create a communicative and physical coupling (e.g. a wired connection) to the computing device 102 when inserted into the apparatus. The connection interface may be configured to mate with a complementary interface or connector of the computing device 102. The connection interface portion may additionally create a communicative and physical coupling to the input device portion 106. Accordingly, data, input, commands, messages, power between batteries or power supplies of components, and so forth may be exchanged between the computing device 102 and the input device portion 106 via the connection interface. Wireless connections may also be employed in addition or in lieu of wired connections.

FIG. 8 depicts generally at 800 an example implementation showing an overhead view 802 and a side view 804 of an example apparatus with the kickstand portion 110 collapsed and the input device portion arranged in an input position (e.g., extending out from the holder portion 108). In this example, beveled edge portions 806 associated with the kickstand portion 110 and the holder portion 108 are visible. With the kickstand portion 110 collapsed and arranged in-line with the holder portion 108 in a common plane, the beveled edge portions 806 result in gaps 808 or notches being formed at the pivot points where the kickstand portion 110 is attached to the holder portion 108. When the kickstand portion 110 is rotated into a support position, the gaps 808 close together to form the support angle and thereby define the viewing angle in the manner previously described.

The coupling of the beveled edge portions 806 in the open configuration produces a self-supporting support structure for supporting the computing device and the apparatus itself.

For example, FIG. 9 depicts generally at 900 close up views of the beveled edge portions 806 and gaps 808 described in relation to FIG. 8. In particular, a close-up view 902 of an example pivot point 210 is shown that corresponds to a collapsed configuration of the apparatus 104. As noted, the pivot point 210 may be implemented in various ways such as using hinges, pins, snap-in connection, spring mechanisms, and other devices suitable to establish rotatable connections. In the depicted example, the pivot point 210 is formed by a circular indent or hole associated with the kickstand portion 110 that fits around a complementary protrusion (e.g., a cylindrical protrusion) on the holder portion 108 and is able to rotate around a center axis of the protrusion. Naturally, the arrangement may be reversed such that the protrusion is disposed on the kickstand portion 110 and a complementary circular indent or hole is disposed on the holder portion 108. Moreover, various other hinges and connections may alternatively be employed.

In the close-up view 902, the pivot point 210 is arranged to position the kickstand portion 110 in-line with the holder portion 108 in a common plane. The input device portion 106 is additionally visible in this view as being rotated into the open interior space 303 of the holder portion 108 so as to form a substantially flat interior surface 608 for a shell cover as previously discussed. Opposing beveled edge portions 806 for the holder portion 108 and kickstand portion 110 are also shown along with a corresponding gap 808.

The close-up view 904 of the example pivot point 210 corresponds to an open configuration of the apparatus 104. In the close-up view 904, the pivot point 210 is arranged to position the kickstand portion 110 in a support position at a designated support angle relative to the holder portion 108. Here, the beveled edge portions 806 are coupled together and the gap is closed as shown at 906 to form the self-supporting structure as previously discussed.

FIG. 10 depicts generally at 1000 another close-up view 1002 of an example pivot point 210. In the close-up view 1002, the example pivot point 210 is illustrated as being formed by a circular indent or hole 1004 that fits around a cylindrical protrusion 1006 as discussed previously. Naturally, a comparable pivot point 210 may be formed on an opposing side of the apparatus 104 also as represented in FIG. 2. A variety of other mechanisms are also contemplated, such as use of a flexible hinge.

In addition, the close-up view 1002 represents the use of a fastening mechanism 1008 in connection with beveled edges 806. As noted, the fastening mechanism 1008 is employed to securely couple opposing bevels together and thereby increase an amount of force applied to break the closure (e.g., decouple) and collapse the apparatus. In the depicted example, the fastening mechanism 1008 is configured as a magnetic closure device embedded within a bevel of the kickstand portion 110 that may magnetically couple the bevel the corresponding bevel of the holder device. Other types of fastening mechanism 1008 are contemplated as noted previously. Further, the use of the fastening mechanism 1008 may be omitted altogether in one or more implementations.

FIG. 11 depicts generally at 1100 a close-up view 1102 of an example pivot point 208 that may be employed to secure an input device portion 106 to a holder portion 108 in one or more implementations. The pivot point 208 may be implemented in various way to establish a rotatable attachment of the input device portion 106 to the holder portion

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108. Additionally, the pivot point 208 may be configured to enable a removable attachment such that the input device portion 106 may be detached and reattached to the holder portion 108 for different interaction scenarios and configurations of the apparatus 104. In one or more implementations, the input device portion 106 may also be reversibly attached. For example, an input device portion may be attached such that the keys side of a keyboard faces out for interaction with a device in an open configuration. Then, a the keyboard may be removed and re-attached with the key side face down, such that the keys end up positioned towards the interior of the shell cover when the collapsed configuration described herein is assumed. In this arrangement, the keys and/or other input functionality of the input device portion 106 are also protected and the functionality is deactivated and inaccessible, which prevent inadvertent and unintentional input from occurring.

In the example shown in FIG. 11, the pivot point 208 is formed using spring loaded pins 1104 disposed on the edge of the input device portion 106 that are received into a complementary orifices 1106 of the holder portion 108. Naturally, comparable pivot points 208 may be formed on two opposing sides of the apparatus 104 as represented in FIG. 2. The spring loaded pins 1104 may be configured to snap-in and out of corresponding orifices to removably and/or reversibly attach the input device portion 106 to the holder portion 108. A variety of other mechanisms are also contemplated, such as use of a flexible hinge.

Example Computing Device

FIG. 12 illustrates various components of an example device 1200 that can be implemented as any type of portable and/or computer device as described with reference to FIGS. 1-11 to implement embodiments of the cover techniques described herein. Device 1200 includes communication devices 1202 that enable wired and/or wireless communication of device data 1204 (e.g., received data, data that is being received, data scheduled for broadcast, data packets of the data, etc.). The device data 1204 or other device content can include configuration settings of the device, media content stored on the device, and/or information associated with a user of the device. Media content stored on device 1200 can include any type of audio, video, and/or image data. Device 1200 includes one or more data inputs 1206 via which any type of data, media content, and/or inputs can be received, such as user-selectable inputs, messages, music, television media content, recorded video content, and any other type of audio, video, and/or image data received from any content and/or data source.

Device 1200 also includes communication interfaces 1208 that can be implemented as any one or more of a serial and/or parallel interface, a wireless interface, any type of network interface, a modem, and as any other type of communication interface. The communication interfaces 1208 provide a connection and/or communication links between device 1200 and a communication network by which other electronic, computing, and communication devices communicate data with device 1200.

Device 1200 includes one or more processors 1210 (e.g., any of microprocessors, controllers, and the like) which process various computer-executable instructions to control the operation of device 1200 and to implement embodiments of a touch pull-in gesture. Alternatively or in addition, device 1200 can be implemented with any one or combination of hardware, firmware, or fixed logic circuitry that is implemented in connection with processing and control

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circuits which are generally identified at 1212. Although not shown, device 1200 can include a system bus or data transfer system that couples the various components within the device. A system bus can include any one or combination of different bus structures, such as a memory bus or memory controller, a peripheral bus, a universal serial bus, and/or a processor or local bus that utilizes any of a variety of bus architectures.

Device 1200 also includes computer-readable media 1214, such as one or more memory components, examples of which include random access memory (RAM), non-volatile memory (e.g., any one or more of a read-only memory (ROM), flash memory, EPROM, EEPROM, etc.), and a disk storage device. A disk storage device may be implemented as any type of magnetic or optical storage device, such as a hard disk drive, a recordable and/or rewriteable compact disc (CD), any type of a digital versatile disc (DVD), and the like. Device 1200 can also include a mass storage media device 1216.

Computer-readable media 1214 provides data storage mechanisms to store the device data 1204, as well as various device applications 1218 and any other types of information and/or data related to operational aspects of device 1200. For example, an operating system 1220 can be maintained as a computer application with the computer-readable media 1214 and executed on processors 1210. The device applications 1218 can include a device manager (e.g., a control application, software application, signal processing and control module, code that is native to a particular device, a hardware abstraction layer for a particular device, etc.). The device applications 1218 also include any system components or modules to implement embodiments of the gesture techniques described herein. In this example, the device applications 1218 include an interface application 1222 and an input module 1224 (which may be the same or different as input module 114) that are shown as software modules and/or computer applications. The input module 1224 is representative of software that is used to provide an interface with a device configured to capture inputs, such as a touchscreen, track pad, camera, and so on. Alternatively or in addition, the interface application 1222 and the input module 1224 can be implemented as hardware, software, firmware, or any combination thereof. Additionally, the input module 1224 may be configured to support multiple input devices, such as separate devices to capture touch and stylus inputs, respectively. For example, the device may be configured to include dual display devices, in which one of the display device is configured to capture touch inputs while the other stylus inputs.

Device 1200 also includes an audio and/or video input-output system 1226 that provides audio data to an audio system 1228 and/or provides video data to a display system 1230. The audio system 1228 and/or the display system 1230 can include any devices that process, display, and/or otherwise render audio, video, and image data. Video signals and audio signals can be communicated from device 1200 to an audio device and/or to a display device via an RF (radio frequency) link, S-video link, composite video link, component video link, DVI (digital video interface), analog audio connection, or other similar communication link. In an embodiment, the audio system 1228 and/or the display system 1230 are implemented as external components to device 1200. Alternatively, the audio system 1228 and/or the display system 1230 are implemented as integrated components of example device 1200.

CONCLUSION

Although the example implementations have been described in language specific to structural features and/or

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methodological acts, it is to be understood that the implementations defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as example forms of implementing the claimed features.

What is claimed is:

1. An apparatus comprising:
a holder portion configured to receive a computing device having a slate form factor between edge members to support the computing device;
an input device portion and kickstand portion rotatably secured to the holder portion, the kickstand portion configured as a partial tray having raised edges on three sides surrounding an interior planar surface, the input device portion and kickstand portion configured to rotate relative to the holder position such that the apparatus is configured to assume:
an open configuration in which the holder portion is positioned at viewing angle for viewing of a display device of the computing device when received into the holder portion, the kickstand portion is rotated to a support position at a rear of the holder portion that opposes a front of the holder portion configured to receive the computing device such that the kickstand portion is arranged to support the holder portion and computing device at the viewing angle, and the input device portion is rotated to an input position that extends outward from the front of the holder portion configured to receive the computing device such that input device portion is arranged to lay flat in front of the display device when placed on a surface; and
a collapsed configuration in which the holder portion, input device portion, and kickstand portion are aligned in a common plane to form a shell cover for protection of the computing device that corresponds to a shape of the computing device.
2. An apparatus as described in claim 1, wherein the holder portion is configured to form a communicative and physical coupling to the computing device when inserted into the apparatus.
3. An apparatus as described in claim 1, wherein the holder portion is configured as a frame with a pair of the edge members connected by a cross beam on one side and open on an opposing side.
4. An apparatus as described in claim 3, wherein the input device portion is configured to fill open space between the pair of the edge members in the collapsed configuration to form a portion of the shell cover in combination with the holder portion.
5. An apparatus as described in claim 1, wherein the kickstand portion is configured to support the holder portion and computing device at multiple different support positions in which the viewing angle is in a range of about ninety to one-hundred and eighty degrees.
6. An apparatus as described in claim 1, wherein a combination of the kickstand portion and the holder portion forms a perimeter of raised edges for the shell cover in the collapsed configuration.
7. An apparatus as described in claim 1, wherein the input device portion is removably attached to the holder portion to enable wireless use of the input device portion when removed.
8. An apparatus as described in claim 1, wherein the kickstand portion and holder portion include beveled edges configured to couple when the kickstand portion is rotated to

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a support position in the open configuration to form a support angle between the kickstand portion and the holder portion.

9. An apparatus as described in claim 8, wherein the beveled edges are coupled together in the open configuration using a magnetic closure device.

10. An apparatus as described in claim 1, wherein the input device portion and kickstand portion are rotatably secured at opposing ends of the edge members of the holder portion.

11. An apparatus as described in claim 1, wherein the input device portion comprises a keyboard.

12. An apparatus as described in claim 1, wherein input functionality associated with the input device portion is deactivated in the collapsed configuration and activated to enable input interaction in the open configuration.

13. A collapsible shell cover for a computing device comprising a holder portion, and an input device portion and kickstand portion both rotatably secured to the holder portion, the kickstand portion configured as a partial tray having raised edges on three sides surrounding an interior planar surface, such that the collapsible shell cover is manipulable to assume:

a collapsed configuration in which a combination of the holder portion and input device portion and kickstand portion are aligned in a common plane to form a shell cover for protection of the computing device configured to receive the computing device in a cavity on an interior of the shell cover; and

an open configuration in which the kickstand portion is rotated to support the holder portion and the computing device inserted into the holder portion at a viewing angle and the input device portion is rotated to an input position that extends outward from a front of the holder portion to facilitate input via the input device portion, the holder portion having a frame including edge members having lip portions configured to receive the computing device and support the computing device along side edges of the computing device and a cross beam member configured to connect the edge members and support the computing device along a bottom edge.

14. A collapsible shell cover as described in claim 13, wherein the input device portion includes a keyboard or a track pad.

15. A collapsible shell cover as described in claim 13, wherein the shell cover formed by the holder portion, input device portion, and kickstand portion in the collapsed configuration is configured to have a tray shape with a perimeter of raised edges surrounding a planar surface that corresponds to a shape of the computing device.

16. A collapsible shell cover as described in claim 13, wherein the holder portion is configured to form a communicative and physical coupling to the computing device when inserted into the holder portion.

17. A system comprising:

a computing device having a slate form factor; and

a collapsible shell cover to receive the computing device including a holder portion, and an input device portion and kickstand portion both rotatably secured to the holder portion, the kickstand portion configured as a partial tray having raised edges on three sides surrounding an interior planar surface, such that the collapsible shell cover is manipulable to assume multiple configurations including:

a collapsed configuration in which a combination of the holder portion and input device portion and kickstand portion each form partial portions of a shell cover for

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protection of the computing device that corresponds to a shape of the computing device so as to receive the computing device in a cavity on an interior of the shell cover; and

an open configuration in which the kickstand portion is rotated to support the holder portion and the computing device inserted into the holder portion at a viewing angle and the input device portion is rotated to an input position that extends outward from a front of the holder portion to facilitate input via the input device portion, the holder portion having a frame including edge members configured to enable slidable insertion of the computing device into the holder portion and a cross beam member configured to connect the edge members and support the computing device along a bottom edge.

18. A system as described in claim 17, wherein the partial portions each comprise approximately half of the shell

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cover, which when arranged in the collapsed configuration form a tray shape having the cavity on an interior of the shell cover surrounded by raised edges around a perimeter of the shell cover.

19. A system as described in claim 17, wherein the input device portion is configured as a keyboard having a plurality of mechanical keys, the plurality of mechanical keys configured to retract into a body of the keyboard in the collapsed configuration to form a flat surface for an exterior of the shell cover and to pop-out of the body of the keyboard to enable input interaction in the open configuration.

20. A system as described in claim 17, wherein the collapsed configuration is configured such that the combination of the holder portion and input device portion is formed by rotation of the input device portion to fill interior space between the edge members.

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